

THE INTERNATIONAL JOURNAL OF IMAGINATIVE MODELLING AND SPECIAL EFFECTS

Sci-Fi & Fantasy MODELS



Special Issue

THE X-FILES

the making of the movie miniatures

Voyager & Deep Space Nine

Foundation Imaging exclusive effects report



Next Millennium Publishing Ltd.



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Top: Borgified Voyager, Scorpion Part 2 and The Gift.

Above: Hiron 3D rendering from Hunters.

Above right: Passing over the top of Brandon's Galor-Class Cruiser.

Right: Neelix faces a horrifying image – Alixia disintegrating before his eyes.

Nebula Class Starship, Message in a Bottle.



Year of Excellence

Ron Thornton and the Foundation Imaging team on creating VFX for **Star Trek: Voyager** and **Deep Space Nine**. See article page 50.

From the editorial desk...

Now we are *Two*

—important news for every reader of *Sci-Fi & Fantasy Models* magazine.

...To *Sci-Fi & Fantasy Models*, November, 1998 – a *sister magazine*. Weighing in at a healthy 96 A4 pages. Perfect bound with a laminated cover and sixteen pages of colour. The proud parents have decided to name her **Effects Special Collector's Edition 1.1.**; the 1.1 denoting *year one, issue one*. You see, **Effects Special** is the new baby that will be putting in an appearance twice a year from now on, supplementing your regular diet of eight issues per year of *Sci-Fi & Fantasy Models* magazine.

What can you expect from our new companion magazine, which draws on five years experience of special effects coverage in **SF&F**?

- *All-new* articles and pictures for one thing – **Effects Special** is not a reprint but a totally *new* magazine concept.

- *All-FX* articles for another, bringing you fascinating text and knockout shots from some of the biggest names in the industry, covering film and TV miniatures, animatronics, creature making, special makeups, body armour, props and CGI.

If you're a regular **SF&F** reader we think you'll *love* **Effects Special**. We want to be sure you are able to get your hands on a copy, however – consider how *rare* **issue one** of **SF&F** is now, changing hands at conventions for many times its original cover price, and with many readers wishing they'd snapped up a copy at the time. Please

note, therefore, that **Effects Special** will *only* be available in the UK direct from *Next Millennium Publishing Ltd.*, from selected specialist stores, *Comet Miniatures* and the *Manchester Model Shop*. We repeat, these are the *only outlets in the UK* that will stock this unique collectors' edition, so we advise you to reserve your copy now by turning to the advance order advertisement on the back page of this magazine.

If you're reading outside the UK, **Effects Special** will be available through *Diamond Comics* stores, selected book stores and our subscription agent in the US and Canada (Tangents – Sellers of the finest in Sci-fi Publications, Products, and other cool stuff! <http://tangents-sf.com>). Rest of World readers please order direct from us – postage details are given on the back page of this magazine.

Gotta go – Dave and myself now have *ten* magazines a year to bring you. Looks like we'll be taking our holidays at night...

See you in six and a half weeks, with issue 33 of **Sci-Fi & Fantasy Models**.

Mike Reccia
Editor, **Sci-Fi & Fantasy Models** magazine.
Editor, **Effects Special** magazine.

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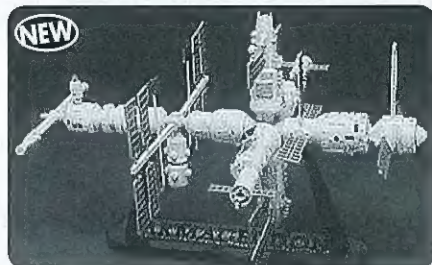


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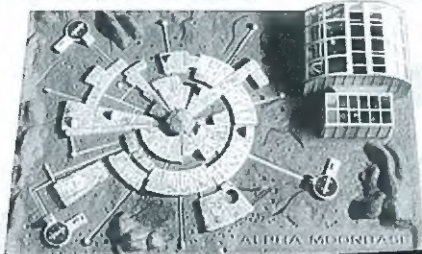
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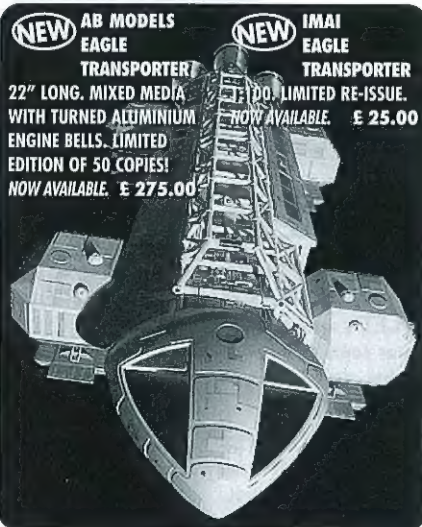


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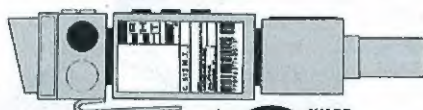
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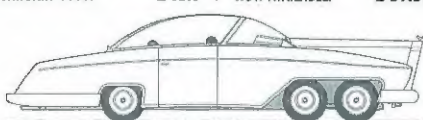
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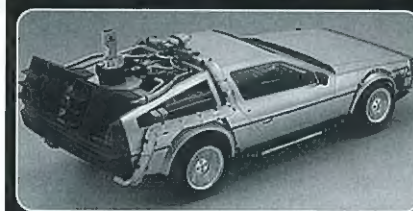
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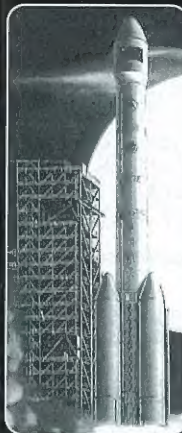
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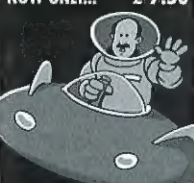


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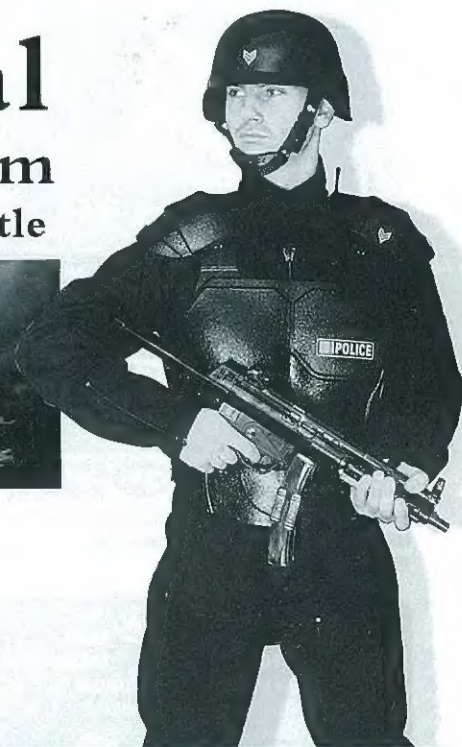
The first issue of **Effects Special**, the twice-yearly, all-effects-stories 96-page companion magazine to **Sci-Fi & Fantasy Models**, will be published in November. UK readers should note that they can only obtain copies from *Comet Miniatures*, *Forbidden Planet* stores, selected specialist stores, *Manchester Model Shop* and direct from *Next Millennium Publishing*.

By using the token printed on the back page of this magazine (you can photostat it if you do not wish to damage your issue) UK readers can send for a copy of **Effects Special** POST-FREE if their order reaches us BEFORE NOVEMBER 30th. This is a saving of over one pound on normal postage prices, which will be



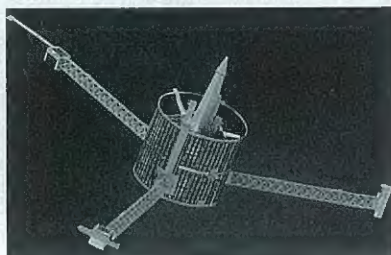
in effect from December 1st. onwards. **Effects Special** includes in-depth stories and remarkable shots, covers film and TV miniatures, prosthetics, creatures and special makeups, hand props, body armour and CGI, and features the work of many of the top names in the industry.

Check our web pages for further updates:
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Lunar Prospector Card Kit

Magellan have extended their range of laser cut card stock models (*Voyager*, *Galileo*, *Magellan*, *Hubble*, *Keck*, *Mars Global Surveyor*) to include the *Lunar Prospector*. This spacecraft began orbiting the Moon in January 1998, with one of its principal tasks being to search for water in the polar regions. *Magellan's* assembled model is around 12" (30cm) overall and is priced at £11.50 including p&p. *Magellan*, 1, Breadcroft Lane, Woodlands Park, Maidenhead, Berks, SL6 3NU, UK.



Fusion Core Lighting Kit

D. F. Howard Enterprises have produced a fusion core lighting unit to fit *Polar Lights'* classic *Jupiter II* kit. The unit incorporates 32 LEDs and a circuit board, with eight active LEDs rotating in pattern as seen on the television series miniature. The speed of the rotating lights can be adjusted via a switch from hovering (slow) to in-flight (fast). Powered by a single 9 volt battery (not included), no assembly is required and the unit installs easily without interfering with lower deck detailing. Unit is \$19.95 (cheque or money order) plus \$4.00 shipping and handling (UK readers send money order for the same amount), or *Polar Lights' Jupiter II* model kit plus lighting unit: \$41.95 plus \$6.00 shipping and handling. D.F. Enterprises, Inc., Dept. 101, 2118 Selzer Ave., Cleveland, Ohio, 44109.



MST3K Bot Building Booklet

The tongue in cheek sci fi cable show **Mystery Science Theater 3000** pokes fun at grade B horror and science fiction movies with the aid of wise-cracking robots scratchbuilt from a variety of items including *Tupperware*, toys, cast resin and vacuum form parts. Now modeller fans of the series can create their own exact replicas of *Crow*, *Tom Servo* and *Gypsy* by referring to a new, officially licenced 16-page colour booklet written and illustrated by Gary Glover which details how to build the cult figures. For further information: <http://www.mst3kinfo.com/> or write: MST3K Fan Club, P.O. Box 5325, Hopkins, MN. 55343. Tel: 612 941 8024.



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Comet News

TB2 Gold

Imai have produced a gold-plated version of their special edition (ie: accurate) *Thunderbird 2* kit, available from *Comet Miniatures* at £25.00 plus p&cp. Also available is a limited edition *Imai FAB one* kit which includes a 2" tall resin *Parker* figure with wooden base at £29.50 plus p&cp. *Comet* have a small quantity of *Imai Shado Mobile* and *Sky One* kits remaining at £12.50 each plus p&cp.

44" Eagle

Because of the advanced-order success of their 22" *Eagle transporter* kit, *A-B Models* are set to produce a 44" version of the craft in June of next year, complete with oxygen cylinder for jet nozzle take-off and landing effects as seen on the studio miniatures. The kit will be priced between £800-£999 and Tony at *Comet* tells us only 10 to 20 kits will be produced. Enquiries are invited from serious modellers only.

Kicking Lee

A brand new 1/5 scale *Bruce Lee* kit in kicking pose, limited to 50 copies, is available now at *Comet* for £69.50 plus £3.00 p&cp.

Titanic special

Comet have a limited number of the *Cineflex Titanic* Japanese special issues in stock at £25.00 plus £2.50 carriage. *Titanic* collectors will also be interested in three new Chinese *Zhen* kits of the ship – a 1/550 scale 20" version at £29.50 plus p&cp; a 1/720 version, pre-moulded in colour at £19.50 plus p&cp; and the same kit with additional motor unit and interior lighting at £27.50 plus p&cp.

Playing Mantis genre diecasts

Due for release late November from *Playing Mantis* are eight TV/movie associated diecast cars. The line-up is as follows: **Back to The Future** car; **Monkeemobile**, **Blues Bros.** *Bluesmobile*; **Blues Bros.** 2000 *Bluesmobile*; **Starsky and Hutch** car, **Partridge Family** Bus, **Dragnet** Sedan, **Andy Griffiths** Patrol Car. Each diecast is £6.00 plus £1.50 p&cp from *Comet*, or buy all eight for £45.00, post free. Also available are two new **Wacky Races** diecasts at £6.00 each plus £1.50 p&cp – *Dick Dastardly* and *Mutley's* rocket car and *Penelope Pitstop's Compact Pussycat*.

Godzilla collectables

Comet have in stock a large range of **Godzilla** collectables based on old and new versions of the monster. From *Medicom*, and limited to 6000 pieces worldwide, is a 1954 **Godzilla** rubber suit version toy featuring velcro strip spine which opens to reveal an *Action Joe* doll of Nakamura inside the monster. The doll is nude, but a T-shirt and shorts are included for collectors who prefer the overheated monster operator in more modest attire! £125.00 post free.

Skura Wars

Three 1/8 scale girl figures from **Skura Wars** are in stock at *Comet* at £12.50 each plus p&cp.

Dr. No Bond

A 12" *Action Joe* doll in tuxedo, depicting Sean Connery as *James Bond* from **Doctor No** and limited to 6000 numbered pieces, has been released by *Medicom* and is available from *Comet* at £99.00 post free.

1999 exclusive

To celebrate 1999 as an important year for the genre modeller, *Comet* will be stocking a 1/8 *John Koenig* in spacesuit figure with stun gun and clear visor at approximately £25.00 plus p&cp.

MPC are set to reissue their **Space:1999** 1/72 scale *eagle transporter* and *Alpha Moonbase* kits at approximately £13 -15.00 each in early January, 1999. Tony promises further release news next issue but urges 1999 fans to advance-order these limited edition kits from *Comet* now.

New Classic Porcelain dolls

Subject to licencing approval from *Polygram Records*, *Comet Miniatures*, in conjunction with a Japanese distribution company and *Classic Porcelains*, will, over the next eighteen months, be producing a series of 14" tall **Thunderbirds** dolls. Each piece will be finished to the high standards of the larger *Classic Porcelain* doll range and be limited to 2000 units. The first dolls should be available in Jan/Feb 1999.

US Moviewatch

Justin Thyme

What a Tangled Web...

Things might be looking up for the oft-rumored **Spiderman** movie. According to an August 19th article in *Variety*, U.S. District Court Judge Roderick McKelvie in Delaware, who is presiding over *Marvel Entertainment Group's* Chapter 11 reorganization, decided that long-halted litigation in California could proceed.

What does that mean?

Well, it means that there is a good chance that all of the parties involved in the morass of legal red tape may have to get together soon and sort it all out. Additionally, the judge mentioned that if the California court is "unable to timely adjudicate" the rights issue, he would resolve the dispute himself. Now this seems like it means that this tangled web of property rights is almost over and somebody could get down to the business of putting a movie together except for the fact that there are some major players involved in this sortie and none of them seem likely to give in easily.

To be honest, I read the whole

Variety article twice, (which you can find on the web at <http://www.variety.com/article.asp?articleID=1117479641>) and I still can't really figure it out completely. It all started in 1985 (yes, 13 years ago) when *Marvel* sold rights to *The Cannon Group*... *The Cannon Group* went belly up and the two partners involved in that company went to two different companies. One of which was *21st Century Film Corp*... who ended up with the **Spiderman** deal. This is where the article starts to get fuzzy. *MGM* was somehow involved in all of this and somewhere between 1989 and 1992 decided that they had perpetual rights to the property. Now throw in *RCA/Columbia* who bought home video rights (and were later acquired by *Sony*) and *Caroleo* who were later sold more movie rights. *Caroleo* then goes under and *MGM* buys their rights to the **Spiderman** movie – making things even messier. Through all of this *Marvel* is just trying to bring the rights back into their home turf to sell them yet again (by the way, did I mention that *Marvel*

is going to be merged into *Toy Biz* – the company that produces the *Marvel* line of toys?).

At this point you're probably more confused than I am and I've now read over the articles three more times as I write this. The short story is that a judge has said that enough is enough and it's time to sort it out. Does that mean that we'll see a **Spiderman** movie before the turn of the century? I wouldn't hold my breath.

Still, this doesn't keep people from getting excited about a treatment that was circulating at the latest *Comicon International* – supposedly written by James Cameron himself...

Cameron and Winston Bow out of DD

James Cameron and Stan Winston, two of the founders of *Digital Domain*, have resigned from the board of directors of that company. The following are the pre-releases from all parties...

Statement by *Cameron & Lightstorm*: "Stan Winston and I are founders of one of the best effects studios in the business, and are very proud of *Digital Domain's* accomplishments. However, the evolution and growth of the Company have inevitably led to a change in the anticipated roles and contributions of its Founders,

in light of which we have chosen to step down from the Board. As the Company needs us less, and functions more self-sufficiently, Stan and I feel that our creative energies are best applied to our core businesses, which are film production and character creation. We will, of course, continue to use *Digital Domain's* world-class visual effects services on our various future projects, on a non-exclusive basis."

Statement by *Digital Domain*: "Digital Domain would like to thank Jim Cameron and Stan Winston for their tremendous contribution to our company over the last five years. As *Digital Domain* has matured, the company has attained an increasing degree of self-sufficiency. We truly appreciate their contributions and sincerely look forward to future opportunities to work together. Although there have been these changes to the Board, please keep in mind that both Jim and Stan maintain their very significant ownership stake in *Digital Domain* and we look forward to continuing to work with both Jim and Stan in the future."

What does it all mean? Who knows?

...Continued on page 35

Gargantua

Creating miniatures for a *big* monster movie.

David Tremont of *The Model Smiths*

Ocean going animals, mutated to gigantic sizes due to toxic waste, stomp on a small island town...

We first heard of **Gargantua**, then called *Project X*, in late November of 1997, from the same people we worked with on **20,000 Leagues Under The Sea**. We read a memo, from the effects supervisor in the 'States, which included a tentative miniatures list and scales to build at. This ranged from large underwater and beach landscapes to sections of the town to be crushed and a selection of boats and 'planes to be destroyed.

Budgets and time were against everyone, so this list was rapidly reduced and the size of the monster was set at 1/4 scale.

Our final build list was a 1/4 scale marina, to match a full size location, and a section of the town.

A miniature of the marina was required as it had to be damaged in a confrontation with the beast and then blown up. A further build was a 1/10 scale underwater landscape with toxic waste drums to be used as background plates for C.G.

elements.

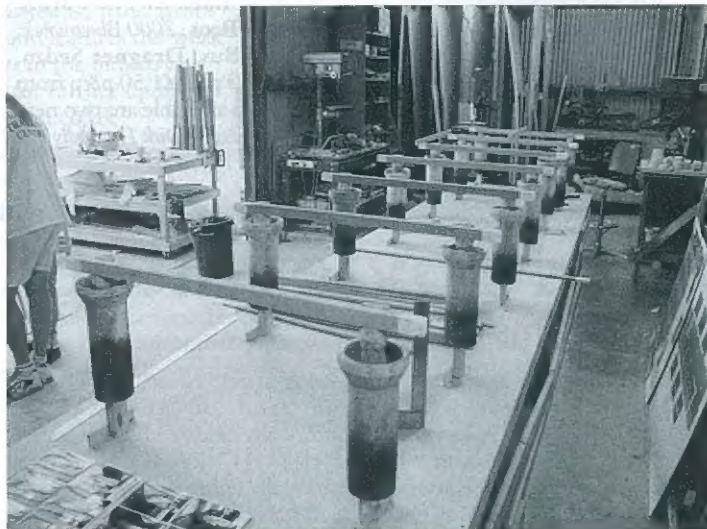
Because the marina had to be destroyed, we decided to build it exactly like the real one with scaled balsa wood planks. The whole surface of the real marina was photographed and mapped and all the details on and

around it were photographed and measured. In all, over 600 shots of the marina, town and details were taken for our reference. We catalogued every plank and how worn it was, every oil and paint spill and so on. At the time it wasn't clear how close to the model the camera would come as the sequence hadn't been finally storyboarded. The structures on the surface were also built fragile, either out of balsa, thin fibreglass or heavy aluminium foil.

Michael and Tony worked for over a week doing scale drawings of



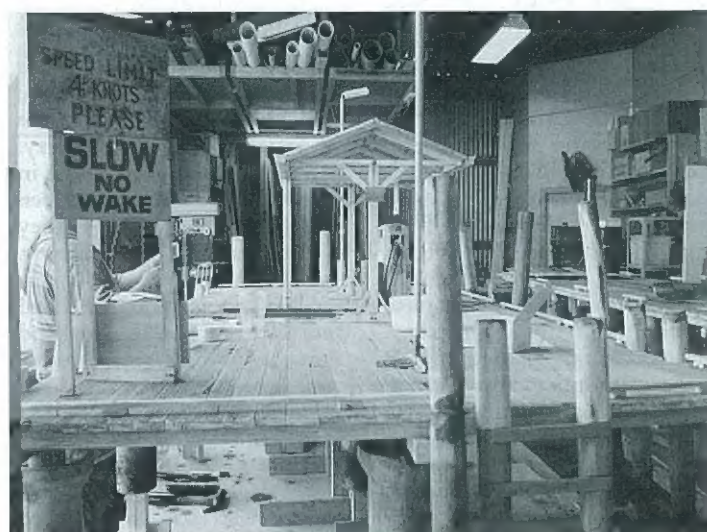
Concrete piles and framing starting to go together.



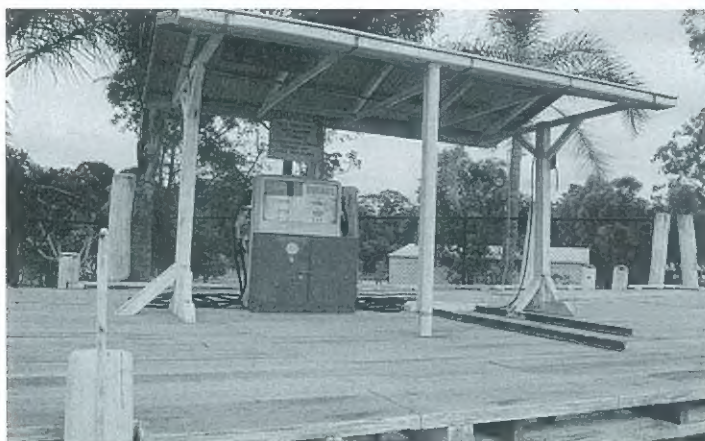
Tony setting details down on the first two planked sections.



Alana working under the marina.



Most of the detail on section three.



Top: Bowser and shed details and above: miniature crane.

all the structures and details and then the big task of cutting all the balsa planks started. The local balsa suppliers were very happy. At 1/4 scale, the marina came to 11.5 metres long and, for ease of transport, was built on 3 separate tables. It had to be moved into one of the stages for some orange screen shots then out into the paddock for the big pyro.

There is a great satisfaction in building large models of existing structures, especially when they have as much texture as the marina had.

Tony started with the pattern for the concrete piles, which was made

out of PVC piping, wood and styrene sheet. This was moulded with silicone and the final pieces were made out of tinted plaster for the fragile value. Alana then set about them with a hammer and pliers to break and damage each of them to match the location piles. The thick green growths were done with acrylic paints and saw dust and other colours and washes were achieved with Floquil paints. Shaped balsa, textured with a wire brush, was used for the poles set into the piles.

Running parallel with this David, Michael, Eric, Tony, Brett, Alana and Andrew worked on the structure

details in-between putting the marina together.

With the piles finished, they were then screwed down to the tables and set at their odd angles. The framing was then placed on these with minimal superglue to allow them to come apart easily. This made it difficult to move the model as the joints kept on popping. The task of laying all the planks on then started. There were over 200 planks cut and textured with a wire brush, to match, as closely as possible, the real planks. These were numbered so as to not mix them up and then painted before assembly so that no raw balsa would show when they were blown apart. Laying them was just a matter of running a small line of superglue along each beam then dropping the planks on. This was very quick to do compared to making them in the first place. We later went in and popped up random planks to more closely match the unevenness of the real marina.

Aging and all paint details were done at the same time the structure went together using acrylics and Floquil paints.

The shed at the end of the marina had a balsa frame with aluminium foil squeezed in a corrugated press for the roofing and gutters folded out of foil. These were then heavily corroded using a solution of caustic soda and painted with washes of acrylic paints.

All the signage at the location was photographed and then scanned, scaled using *Photoshop*, then printed out. Signage matched the real things perfectly, with the advantage of being able to add a softness to give the signs a better scale, which meant photographing the model from two metres away would create the look of the real one at eight metres away.

The crane was made out of thin, rolled aluminium and styrene sheet, painted and aged with the same

Crew:

Model Makers–

David Tremont
Michael Daczynski
Eric Backman
Tony Voevodin
Alana Leong
Brett Harrison
Andrew Sturme

technique as before. The danger of making a fragile model look like sturdy metal is that when people visit they think that it is sturdy metal – until they bend it. Golden rule – play safe, don't touch other peoples' models.

The bowser was made out of thin fibreglass and styrene and the checker plate fire hydrant box was cast in thin resin. Interesting place to have a fire hydrant if the bowser goes up. This was the starting point for the explosion and so, before being set with pyros, it was broken into many pieces and lightly glued back together.

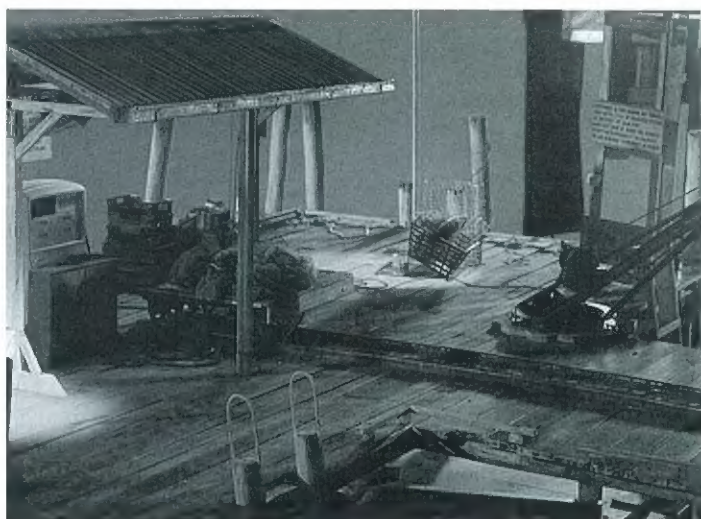
The signs, lamps, trolley, tracks, ladders and poles were aluminium, balsa and styrene, and, as with everything else, designed to break. Again, without knowing the final sequence, we took no chances and made everything breakable.

With a model like this that has to cut in and match the live action shoot, dressing has to be very accurate. On set, the final dressing usually happens on the day at the director's discretion and getting these references relied on viewing the rushes and pictures taken that night.

The model was towed down to stage 2, behind a fork lift, where it sat for a couple of weeks while live action shots were done before being set into position and the dressings put into their places. For these shots – the interaction with the



David next to the marina in front of the orange screen.



Marina details in front of the orange screen.



Bruce Phillips lines up a shot with *Mum*.



Detail section of the Police station courtyard.

monster – only the last two thirds of the model was used. When done, it was put back into the corner to await its final destruction.

Eric built four 1/4 scale boats to be used as dressing, which were subsequently not used. These were built by screwing 'boat shaped' formers to a board then bending and gluing thin ply around them. This box shape was then lifted off and detailed with seats, ribs, gunwales, etc. Most people were very keen on the boats and wanted to take them home with them.

In the original story the monster moves into town causing a lot of destruction, which would prove to be too costly and time consuming, and so was reduced to the shore line and one building. This, at 1/4 scale, was still 18 sq. metres, but the large majority of the landscape was dirt.

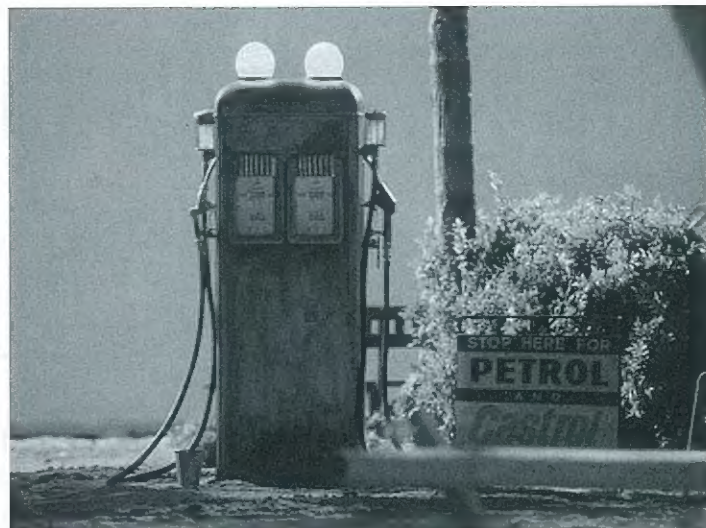
The landscape consisted of the Police Station, its courtyard and trees, dressings such as a petrol bowser, signage and a lot of dirt.

Michael, Andrew and Alana went out to the location to measure up the ground area and the building so the drawings could be done. We were building the model at the same

time as construction were building the sets, on location, so it made it difficult at times to know what was to be used and what belonged to the builders. Added to this was the occasional change to the set which meant a change on the model.

There was to be no destruction on the Police Station, so it was built out of custom wood with all the dressings such as windows and doors, etc., done with styrene and balsa. The big tree in the courtyard started as a timber, pipe and wire frame with real twigs stuck in the ends then wrapped in tape and fibreglassed. Plastic foliage was hot glued to the branches with wire mesh for support. The rest of the ground foliage was whatever fine plastic stuff we could find. All this was to be shot at night time and so was mainly going off into blackness or silhouetted, making most of the fine detail unnecessary. We still, however, had fun doing all the tables and chairs and garden dressings including the wheelie bin that Tony took great pleasure in building. This was then presented to him at the end of the shoot.

This was all set up on six table tops in stage 2 and was shot as a separate element to the marina. It was just



A bowser detail.



Mum getting ready to do battle with the soldiers.

a matter of screwing all our pieces to the tables with painted fake fur for grass and dirt for the rest of it.

With all the main shots done it was time to get the model ready for its destruction. The sequence involved a soldier accidentally shooting the bowser at the end of the marina, blowing it up and igniting the fuel lines along its length.

A meeting between the effects people and the explosives man, Albert, decided how the model was to be destroyed, with a main bang at the bowser then a sequence of bangs along the length of the marina. While Albert built his charges we lifted up all the section to be blown out and broke it into small pieces then lightly tacked it back together again. We also re-wired the lights so the wires ran around each charge in sequence and the lights would go out as the charge went off. More of the shore front had to be built as the camera angles would now see more.

Both the marina and landscape together totalled nine sections plus three building pieces all being driven to their location on a truck.

The whole set had to be lifted high enough to clear a background fence as well as level it on a sloping ground. Each piece was lifted and levelled on a fork lift then legs and braces screwed to the bottom of it. All crews moved in to start setting up the lights, rigs, etc., while we finished the last of the dressing and wiring on the model. In all it took two days to get ready.

Five cameras were set up to cover the shot and after a couple of electrical problems were fixed and several rehearsals all was ready... the marina section of the build was 11.5 metres long and 3 metres at its widest point, covering about 14.5 sq. metres plus the legs – all fitted into our big bin less a couple of souvenir bits. Everything went very well, resulting in a lot of happy and relieved people. When a shot like this is over, and it works, I feel like a huge weight has been lifted off my shoulders. It is a great feeling. I get asked, "do you hate seeing your models being destroyed?"

No. When they are built for that purpose the disappointment is when the pyros don't work properly.

Making Monsters

An interview with John Cox of the *Creature Workshop* on creating *Gargantua*

David Tremont



John Cox in amongst some of the creatures built for *Gargantua*.

David: How did you first hear of the job?

John: This job came out of the blue for us. We got a 'phone call that there were some producers on their way down to talk about a movie, it had some monsters in it and would we be interested in talking to them. They showed up on our doorstep probably about a week later, spoke to the producer, he went back to America. Within ten days the director was down here, we had the job and we started on it.

David: That quick !

John: Yes, it was frightening how fast it was.

David: What were the original ideas and what were you asked to build?

John: Basically, the studio executives had some designs drawn up, very loose line drawings of some dinosaur-type monsters with lots of spiky fins down their backs, big sharp teeth and lots of little rice bubble scales all over them. They were very rough, so we sat down with the director and his feeling for the movie was that he wanted them to appear realistic and wanted us to design something realistic that was based on the fact they lived underwater, they had come up on land, therefore they were some sort of amphibian. So we had different growth stages from the *Baby*, the *Teenager*, *Mum* and *Dad*. We went through some books with lots of amphibians in them,

picked out a couple of bits and pieces that looked really good, started out leaning more towards the frog end of the scale and then came further and further up the evolutionary ladder so that it was more two legs, two arms, human proportions – man in a suit.

David: Was it always designed around a man in a suit?

John: Yeah! Always. There wasn't the time to go into doing anything really different from two arms, two legs, one head because we just wouldn't have been able to do it in the time. We had nine weeks from the time they said go to design it, construct it, get it all operating and have it on set and then we continued to work through the five week shoot. So all up we had fourteen weeks on it. We ended up building four babies, three adolescents, probably ten body parts of the adolescents, one mother and one full size mother's head which was the biggest piece we did. It was a huge fibreglass head about eleven foot long, eight foot high and six foot wide because she was supposed to stand about twenty eight foot tall, so even though we built a mother suit it was just a standard man in a suit.

David: To represent quarter scale?

John: At quarter scale, yep.

David: Were they always going to be that size or were they going to be bigger?

John: They were originally much bigger. *Dad* was sixty five feet tall at one stage.

David: And what caused the change with that?

John: They realised that they were talking about something that would not exist. It was so big that it would have been *Godzilla* size.

David: So they wanted to keep it in the realms of possibility.

John: Exactly. So *Mum* ended being twenty eight feet tall and *Dad* was to climb up to thirty five feet. They didn't want the adults to be so big that they could destroy all the humans with one toe. They wanted there to be some possibility that the people had a chance against these things. So that everyone just didn't run away in blind terror and hide under the nearest house.

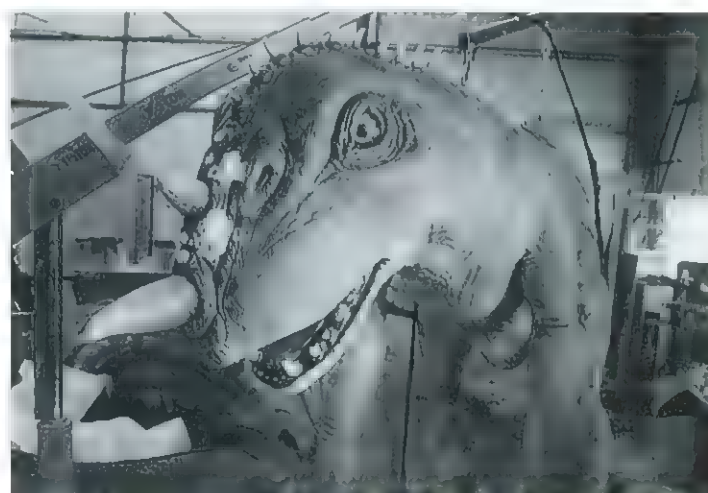
David: So did any changes happen to simplify designs during the build?

John: All the way through. Basically, the man in the suit concept died two weeks before we were due to shoot because of some of the control systems. The pneumatic cylinders and valves and cabling and wiring meant that the guy that was getting in the suit had very little room to move or breath and at the end of the day we didn't feel that he was going to be safe all the time in the suit with us operating, mechanically, certain components and him being inside

only to move the legs and make the arms go up and down. We had a meeting eight or nine days before the shoot and decided we could do that robotically. It wasn't the best solution to the problem but it was the solution that gave us everything for the shoot, so we took the guy out of the suit, did mechanical arms and legs and used the guy in the suit just for some shots of the feet coming down, walking, close ups on feet, bottoms of legs, sort of thing. That allowed us to get a bit of fluidity into the walking motion. Given the time restraints, which it all boils down to, we had designs that would have worked beautifully, but they were another six weeks away. To get all the components in as well as work through Christmas as well as problems with supplies getting to us and everyone being on holidays became our biggest problem. When you sit down to watch a film, as a member of the audience, you are not aware of all the constraints and restrictions and compromises that have gone into building something to get it on screen. With a tight shooting schedule there wasn't the time to go back and re do any of it. Everything had to work first time. What they got was what they had to use.

David: No second chance !

John: No, none whatsoever and we were turning up on the days with things that were untested. Workshop tested, but not tested on set in the



The adolescent creature on rig.

conditions that they were to be used in. So a couple of times we got caught out, but all in all we came through it pretty well.

David: Would you have preferred it to be different or do you like that kind of challenge?

John: Well! If you are given ten weeks, you do it in ten weeks, if you are given twelve weeks you get it done in twelve weeks. The shows with the very short build times are always very frantic, but then again they are over very quickly. You are not hanging around for months and months. You get in there, you get the job done, you get out. Sometimes that works really well. However, being in the industry twenty years now, it is easy to spot the ones that definitely can't be done in the time frame and walk away from them straight away.

David: I guess you had a bit of freedom on what was going to be achieved on this one.

John: Very much so. The script was being re-written constantly right throughout the show and I was being consulted all the time, by the writer, on what the animatronics could and couldn't do as they were writing scenes. Again, it's nice to be able to tell directors that animatronics can't do this, however computer graphics can. You can get exactly what you want, you just have to choose which way you want to go. The unfortunate thing about this quick show is that there wasn't time in post production to actually do some of the computer graphic shots so they had to write around the limitations of the animatronics. Things like the puppeteered baby had to be layed down with the puppeteers' hand just out of shot so we couldn't show him snuggling down or taking a few steps and laying down. All this is achievable with computer graphics and not achievable with animatronics in the time we had. There were a lot of things they had to live without. One shot in particular, became even too much for us, which was *Junior* rising up out of the surf. We had an animatronic one built for it, but the thing that was against us was the fact that it was in surf and we had tides coming in and out, unprotected beaches and the whole process of getting it out, sinking it, stabilizing it and making sure that it was far enough underwater so that when the tides were right it coincided with what the rest of the night shoot

could accommodate. It became such a logistic nightmare that they just scrapped it.

David: So did that become a computer graphic model?

John: Actually, not at all now. They decided that they could live without it because now they are doing a creature's point of view rising up out of the water so you see it when everyone else on the beach sees it. So there is none of this lumbering creature coming out of the water. Because as Bradford, the director, said quite rightly, the audience would be way, way ahead of the actors.

David: You want to see it at the same time.

John: Yeah, you see it happen as it happens to the people in the film.

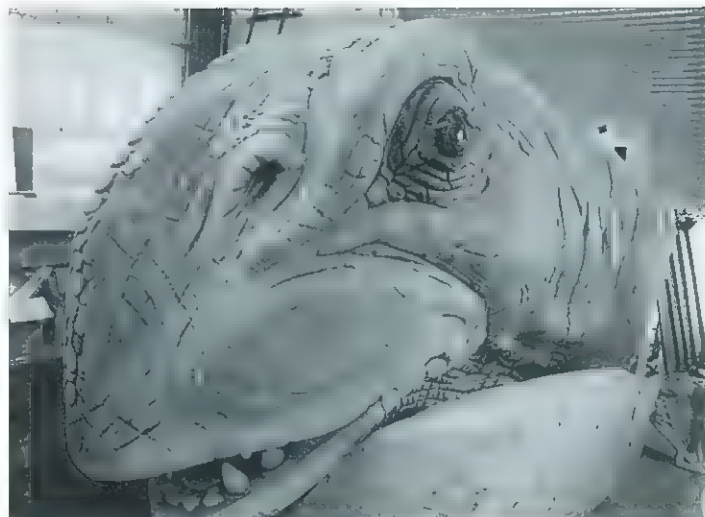
David: Were there any more changes to their designs?

John: Basically we started with *Junior* being the man in the suit and worked backwards down to the baby so it looked like it did grow up to be this thing. Then, with the design of *Mum* and *Dad*, we took the phase a bit further. The design went through one more major change and that was the addition of big, sharp claws, big pointy spines right down the thing's back and sharp, pointy teeth. None of those things were in the original concept because amphibians don't have those things. It was felt that the creature didn't impose a great enough threat. They felt, should one of these creatures come up and be

too likeable there would be no tension or conflict which then drives the story on. This was the final change, to make them appear more threatening. We kept the baby as not having those characteristics.

David: How did the construction start?

John: We had two teams working at the same time getting the sculpture done because the mechanical guys are always the ones under the gun. After you sculpt, mould and cast a piece for them to work with you are looking at four to five weeks and you have nine weeks to build it – there isn't much time. We



Above: *Mum*! Inset: the animatronic *Baby*.

had to have these guys take measurements off all the sculptures we were doing and start constructing pieces which would hopefully fit within our creatures by the time they were done. So we had one team working on the big sculpture of *Junior* and the other team doing *Baby*. *Junior* was sculpted out of a water-based clay because he was so big and we really needed to knock him out. So we managed to do that sculpture in about ten days with six people on it really getting stuck in. *Baby* was sculpted out of *plasticine* in about nine days with three people. They were then okayed by the producer and director. They then went to their moulding stage where all the pieces were moulded in fibreglass for the foam latex or silicone skins. From the initial moulds we had to make cores for all the animatronic stuff then moulds of the cores. Once we had the cores made, the mechanical guys had something physical to do all their measurements so they could really get a good idea of how they were proceeding.

David: Were they close to their initial starts?

John: Yes, they were very close.

David: Relief?

John: That's right. There were a couple of joints here and there that needed adjusting but it wasn't overly drastic. We then went to pulling out all the carbon fibre pieces, all the under-skull core shapes for mechanics. They went and started those while we were running the foams. Then it becomes a pretty tedious process after that because all the foam skins have to be cleaned up, the seams trimmed, filled over, made to look perfect, which really can only be to ninety nine percent. Then, once all the animatronics were done, give them a bit of a run through then skin

them. At that point – this is why it is good to have a test phase – the skins, no matter what precautions you take, always shrink slightly and then once the main body section, two legs, two arms and the head are glued together that constrains and puts real restrictions on all the mechanical movements. To the point you could lose forty percent of your movement.

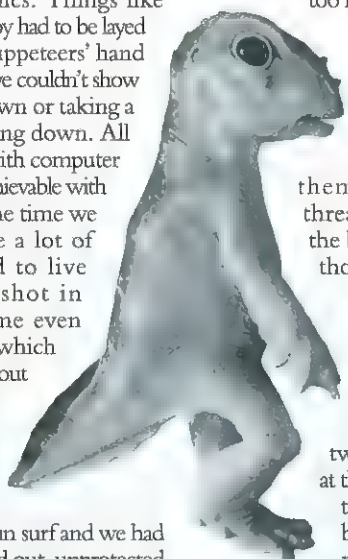
David: That is substantial.

John: It is, and if you don't have time to go back and beef things up or alter the skin – you have to live with it. We had some limitations, where the head joined the body we had to stretch the skin so that it would glue. This caused enough of a difference to stop the head turning right round left and right.

David: Did it pose a problem?

John: It does to the people that build them. They jump up and down saying "we built it to be able to do this, now the skins you have put on it..." You always do get a split down the middle to the mechanical camp and the exterior camp and each always has a go at the other for not having done something well enough. Everyone came to a compromise at the end of the day. It would always be nice to have the skins be as flexible as you want and the mechanics to do what they are designed to do, but that is only possible if you have a bit of leeway up your sleeve and go back and do alterations.

The silicone skins were the ones that surprised us the most. We knew that they were going to be heavy, but they became *exceedingly* heavy. Being dead weight with no support made these things really difficult to move around. To maneuver about one hundred and twenty kilograms of silicone from the workshop onto a



truck to transport it to set, off the truck and into the water. Once it is in the water it's fine, but it poses a real nightmare with six guys to pick him up and carry him.

David: How many versions did you build?

John: We had a fully animatronic, free standing *Baby* with all the cables coming out the bottoms of its legs and he could do just about everything. He was operated by five people, mostly with cable with the computer controlling his facial movements. Pretty much just jaw up and down and side to side, blinking, eye movement and throat pulsing for a breathing thing. All other functions, his arms, body, head, neck, legs and tail were cable. That was the most complicated *Baby*. Then we had 'lagoon' *Baby* which was used for shots swimming around the lagoon, which unfortunately got cut back to almost nothing. The creature that we built almost couldn't do what it was asked to do on the day because it was built to do so much more and what they wanted it to do was so limited that we couldn't turn everything down. They wanted it to swim in a straight line and it was built to swim around and do curves and so was very flexible. It had three movements of rotation on its body that couldn't be locked off, so when his tail moved from side to side to propel the thing forward his head moved and acted like a rudder and moved him from one side to another. The only way we solved it was to stop the tail movement all together then move him forward starting the tail just before he was about to come up on land. This was a shame because he was able to do so much more. It was a three day shoot at the lagoon, at the beginning of the shoot, and when we got there it was reduced to twelve hours. It would have been nice to have seen 'lagoon' *Baby* do its stuff, but there wasn't the time. So that was a disappointment, but that was about the only thing that really didn't work. Then we had a 'puppeteered' *Baby* with head movement operated by one puppeteer and another operating the arms.

David: Was it a full *Baby*?

John: Full *Baby*, yep, so we could do shots of him running through the jungle and you could see along his back and his tail move and again we had the computer operate all the facial functions.

We then had 'laying' *Baby*, for when the baby was to appear sick and didn't do much. It had a breathing function, chest up and down, and the eyes were closed. If they wanted to see the head raise up we cut to a close up of 'puppeteered' *Baby*.

Junior, we had the fully animatronic version with foam latex skin that was capable of walking. It

was shot last on the quarter scale set in an orange screen stage. So we always knew we would be finished with *Junior* before we even started with *Mother*. So when *Junior* was done we had seven or eight days before *Mother* was needed, so we stripped the skin off him, put the *Mother's* skin on then shot that with her. We had two extra legs for *Mum* to show them coming down onto the beach and we also made the full size head. It had a nostril operating to show her breathing and when she gets shot it would slow down to signify she had died. It also had a moving eye and eyelid. That was all the pieces that we built.

were twelve sculptors, mouldmaker, finisher people because I wanted people who could carry on from sculpting through to finish. Then we had another eleven mechanical guys.

David: What about the puppeteers?

John: Puppeteers were basically culled from the crew that made everything, with one specialised puppeteer to operate the 'puppeteered' *Baby* that needed to show more emotion through movement.

David: Any other major problems?

John: The crew ran very smoothly. There were a couple of bottle necks from supplies over the Christmas break, which did cause us problems, but we managed to get through them. That adds stress to the situation and we ended up paying huge amounts for couriers. But all in all I think that it ran smoothly. On the set we had little problems. Some of the locations are always difficult to lug all your gear down to but, at the end of the day, all the creatures did what they were supposed to do. It was the one day at the lagoon that was probably our one bad time on the whole show.

It was a good show to work on as we got to make some monsters and that was the whole reason I got into doing this sort of work – to build some monsters and twenty years later I finally got the chance to do it.

SF&F

was puppeteered by eight people and was hung out the back end of a four wheel drive going backwards so the weight of the engine counter balanced the whole thing. That way we were able to drive him along sand, jungle, mud or whatever and it appeared as if he was walking through the jungle. He was a pretty complex critter. We then had a silicone *Junior* that could stand up and was to be used to come out of the surf, also gets tranquillised, falls to the ground and can raise his head and tail like he has been drugged and knocked out. We then had another silicone skin, basically a dummy, to get pulled behind a boat or get thrown in the water. There is a sequence where he savages a guy in the water and we just had him do the *Tarzan* death roll with him. We then had a pneumatically controlled head of *Junior* that moved very fast with about a three foot movement and snapped its jaws for shots of his head coming into frame snapping at people. We had another head for underwater shots banging against the cage. We had two legs, two arms and a tail for close up shots of walking or striking out at somebody.

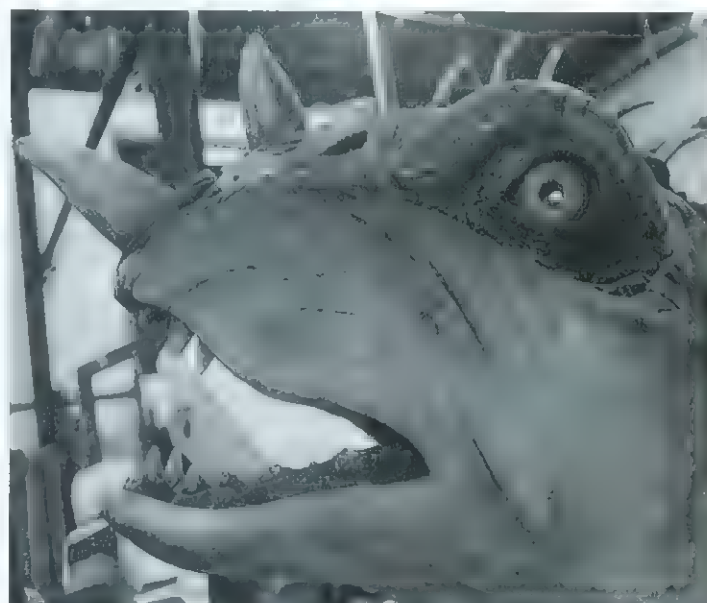
Mother was the fully animatronic *Junior* re-skinned when he was done with because *Mother* was always to

David: All in nine weeks.

John: Yeah, it was a lot.

David: How many people all up on that?

John: Twenty seven people. We had two people full time in the office, the project coordinator and a girl to run the office. Myself, then there



Inset: concept drawing for the adolescent creature and above: the realised creation.

Lurker's Roar

Creating a CGI monster, step-by-step.

George Cairns

This article is intended to encourage traditional modelmakers by highlighting the similarities between traditional and computer modelling.

The computer can help you with the visualisation of your science fiction and fantasy projects in many ways. However, as with traditional modelling, there is no substitute for good ideas and hard graft. The old saying "garbage in – garbage out" certainly applies to computer modelling.

Though I'm not a traditional modeller there seems to me to be many similarities between the construction of a CG model and a that of a 'real' one. The most efficient way to make a computer generated model is piece by piece. As well

as assembling the component parts, you get to build them from scratch. You then texture-map (paint) these individual parts and group (glue) them together.

I will explain how I used a 3D modelling package (*Strata Studio Pro*) to create the monster in the image "Lurker's Roar." This image was inspired by a visit to *Whipsnade Wild Safari Park* armed with a 35 mm camera. I took various shots of animals and enclosures with the intention of adding a *Jurassic Park* style monster later.

Stage One. Starting with the creature's head, I decided to make the upper and lower parts separately so I could place the jaws in any position I liked. My first step was to create a series of ribs to form a skeleton of the upper part of the monster's head. I drew the first rib freehand with my mouse, then duplicated this several times and altered the size and shape of the copied ribs to create the skeleton of my monster's head. I then formed computer skin between the ribs to create a solid shape. (The principle of skinning reminds me of the balsa wood ribs my dad used to create model glider wings. Unlike the glider, you can easily *unskin* your computer skeleton, changing the spacing and shape

of the ribs until you are happy with the shape that they make.)

Stage Two. The skinned-together ribs formed the top half of the monster's head. The eye was made by skinning four other ribs together and adding a sphere. The sphere was stretched slightly to give an oval 'eye-ball' shape.

Stage Three. I made the lower jaw by skinning together some smaller ribs. The teeth were made in the same way. Once I'd made one tooth I simply copied and pasted in as many as I required. I adjusted each tooth slightly by stretching and scaling it to make each one look individual. It took about half an hour to make the teeth, tweak them and place them, one by one, into the creature's mouth.

The tongue was also created by skinning together a series of ribs.

Stage Four. Once I'd built my components it was time to texture-map them. When people talk about texture-mapping a computer model all they're really doing is painting it.

It's amazing how a smooth and plastic-looking model can be made to look realistic by choosing a decent texture. While at *Whipsnade Wild Animal Park* I took a charming snap

of a rhino's rear on a 35mm camera. I then took a section of the image and made it into a texture in *Photoshop*. I could then texture-map the monster skin image onto my CG beast.

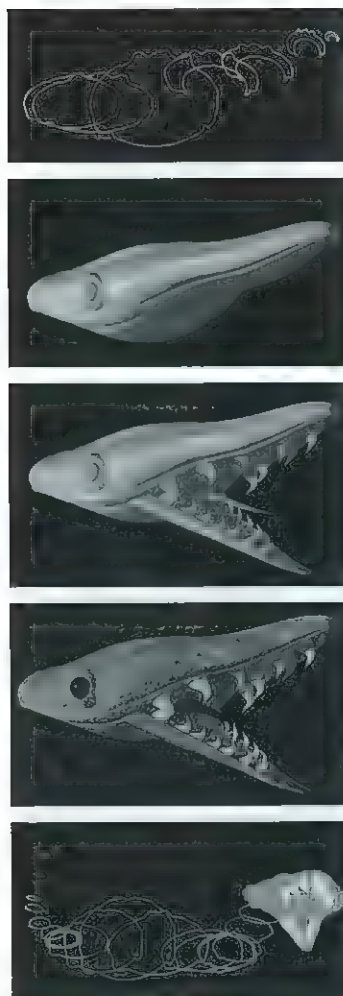
While all computer 3D packages include their own textures, I try to create my own. I find the textures that come with the software are usually too 'cartoony', so I prefer to take pictures of real textures – leaves, brick, rhinos – which result in a realistic looking model.

To avoid the nasty, shiny look that curses many computer images I turned the reflectivity of the rhino texture down to nothing. I also applied a black and white version of the texture as a 'bump map'. A bump map makes a smooth computer model look 'rough and ready'.

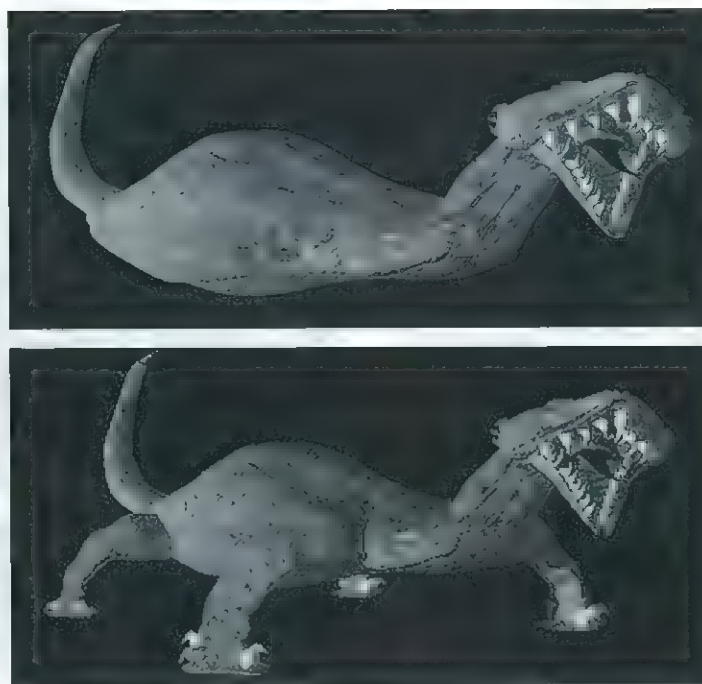
Stage Five. Once I'd made the head, the neck, torso and tail were relatively straightforward. Once again I created some ribs and skinned them together.

I could reposition the neck or tail by un-skinning the ribs, adjusting their position and re-skinning between them. The creature could therefore be placed in any position. I could create a herd of monsters just by duplicating the finished model and adjusting each copy separately.

Stage Six. I next needed to texture-map more of the rhino texture onto the creature's torso. All that



Stages 1 through 5.



Stages 6 and 7.



Rhino skin

remained was to knock up some CG legs.

Stage Seven. The legs consisted of several new ribs skinned together and textured. The claws were created by modifying one of the teeth. Having created one leg it was a simple matter to copy and paste three more and position them accordingly.

Once the beast was built it was time to render the finished model. It was at this stage that I positioned my virtual sun and fill-light to match the lighting conditions of the background photograph. When I was happy with my lighting I ray-traced the model to produce the finished creature. Ray-tracing means that the computer fires a ray of light at each point on the



The completed scene.

model. The light beam bounces off each point on the model and returns to the viewer with the relevant information about texture

and lighting for that particular point. This process can take many hours, but at least you can go and do something else (like sleep!) while the computer calculates what the finished model will look like.

And Finally... Having completed my *Lurker* it was time to release him into the wild. I scanned in a photograph I'd taken at *Whipsnade* and used *Photoshop* to composite the CG model monster into the background. The compositing took a couple of days. Small touches like the *Lurker's* shadow and reflection in the water helped to ground him in reality. I just feel sorry for the poor deer!

G. C.

Meet those Mad Monsters...

A review of Pasadena's *MM Party*

Anthony Taylor

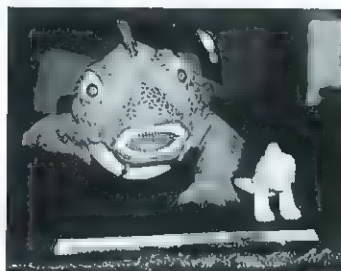
Pasadena's Mad Monster Party '98 was a rousing success for show promoters Sideshow and Icons.

The predominantly model kit show took place at the Pasadena Convention Center May 23-24 and featured guests such as Bob May (the robot from *Lost in Space*), Jeremy (Boba Fett) Bulloch, and artists Bernie Wrightson, William Stout, Tim Bradstreet and Tom Gilliland. Many new kits were premiered at the show and dealers and buyers came from as far away as Japan to participate in the festivities.

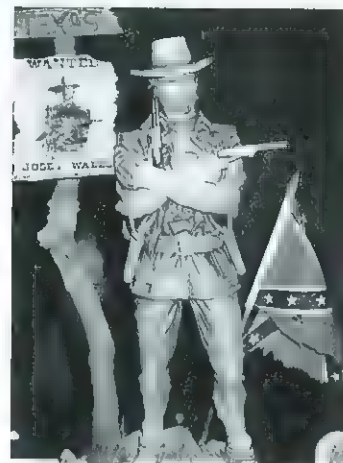
Greyzon shared a table with Doppelganger, who had several new prop replicas for sale. The first was *Deckard's* gun from *Blade Runner*, a big hit with the "replicant" retiring crowd. The other was *Logan's* *Sandman* blaster from *Logan's Run*. This piece is a non-firing replica of the gun from the popular Michael York film. Greyzon did brisk business with their monster skulls, as well as the new *Fremen* *chrysknife* from the movie *DUNE*. Reach Doppelganger at 373 Broadway, Ste. #c22, NY, NY 10013 and Greyzon at 13 West 13th St. #3bn, NY, NY 10011.

Geometric Designs were selling pre-release resin copies of their upcoming *Aliens* Ripley kit, which has been approved by actress Sigourney Weaver. The vinyl kits should be available by the time you read this. Geometric's *Son of Frankenstein* Kit also made a big splash with the west coast crowd. Call Geometric at 612-291-109 and tell them SF&F sent you.

Terry Fitton and Brett Butler of *Monsters in Motion* also premiered several new kits including, from *Planet of the Apes*, the *Iconis* - the spaceship that crashed at the beginning of the film. The kit is a great representation of the ship, with interior detailing included. Also new from MIM is the *Flying Saucer* from Ray



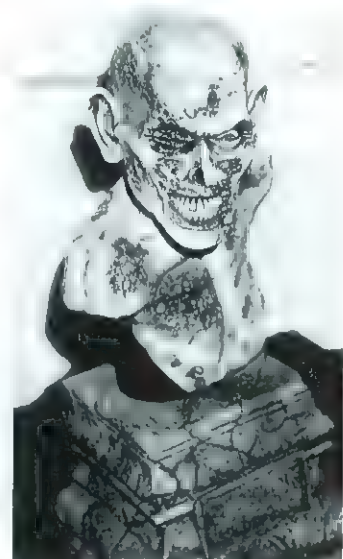
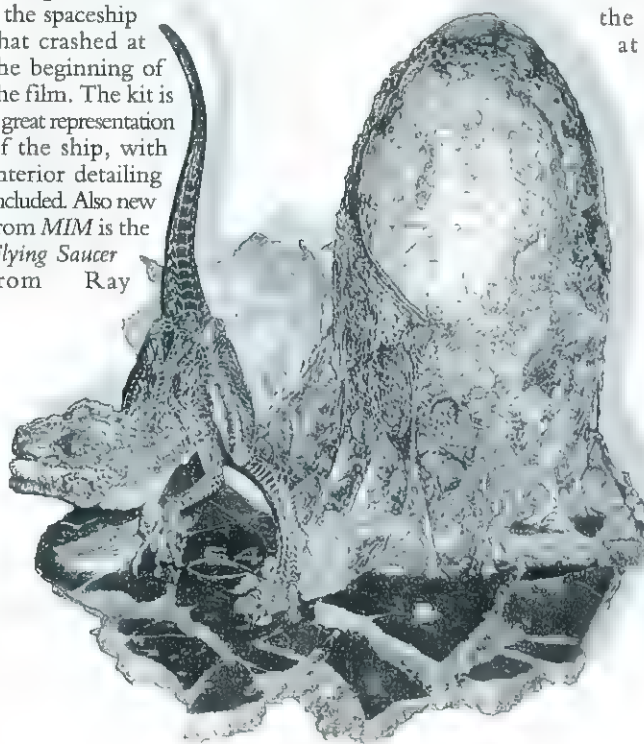
Above: Tourist Attraction - Outer Limits kit by Dimensional Designs and Josey Wales. Below: Godzilla maquette painted by Geno Acevedo for Patrick Tatopolous and (right) Cedrick by Spectral Motion.



Harryhausen's classic *Earth vs. The Flying Saucers*. The kit recreates the landing of the ship at the

Hayden Planetarium, and includes figures and a diorama base. For more info call Terry or Brett at 714-577-8863.

The Outlaw Josey Wales and the Alicia Silverstone *Batgirl* were





Above: some of the creatures shown by Michael Burnett Productions. Insert: Ballistic Rose by G-Zero. Right: Bruce Lee by Planet Earth.

prominent at the *Needful Things* booth. Also new from the company was a model of the *Taco Bell Chihuahua* from the hilarious *Godzilla* commercial "Here Leezard, Leezard..."

Danny Soracco of *Dimensional Designs* made the trek down from San Francisco, bringing with him several new **Outer Limits** kits, including the prehistoric fish from the episode *Tourist Attraction*. Danny's line of **Outer Limits** kits is one of the best values in the hobby, priced at \$50.00-70.00. Also new is a Frederic March *Mr. Hyde* kit, coming soon. Contact *Dimensional Designs* at 415-788-0138.

Right next door was *Planet Earth's* Kim Ito, who is one of the most talented sculptors in the field. Kim was previewing his new, fully licensed Bruce Lee repainted figurine. This piece is even nicer than Kim's classic Bruce Lee as *Kato* kit, which is still available from *Dimensional Designs*. The likeness is so good it's eerie and the figure features a yin-yang base. For more information on the new figurine, write *Planet Earth* at 2269 Chestnut St. #306, San Francisco, CA 94123.

Simian Productions were just up the row with their line of models based on the artwork of *Coop!* (artist Chris Cooper),

who stopped by to sign autographs and hang out with sculptor Barsom Manashian. The latest *Coop!* piece is *Space Girl*, a classic in the making. *Simian* were also hawking their *Brak* and *Zorak* kits from **Space Ghost: Coast to Coast**. Contact the company at 3775 E. Denton Ave. #93, St. Francis, WI 53235.

All the way from the land of the rising sun, Japan's *Fewture* brought a menagerie of some of the coolest kits on the planet! Based on Yasushi Nirasawa's manga (comic) art, their line of *Nina Dolono* kits are some of

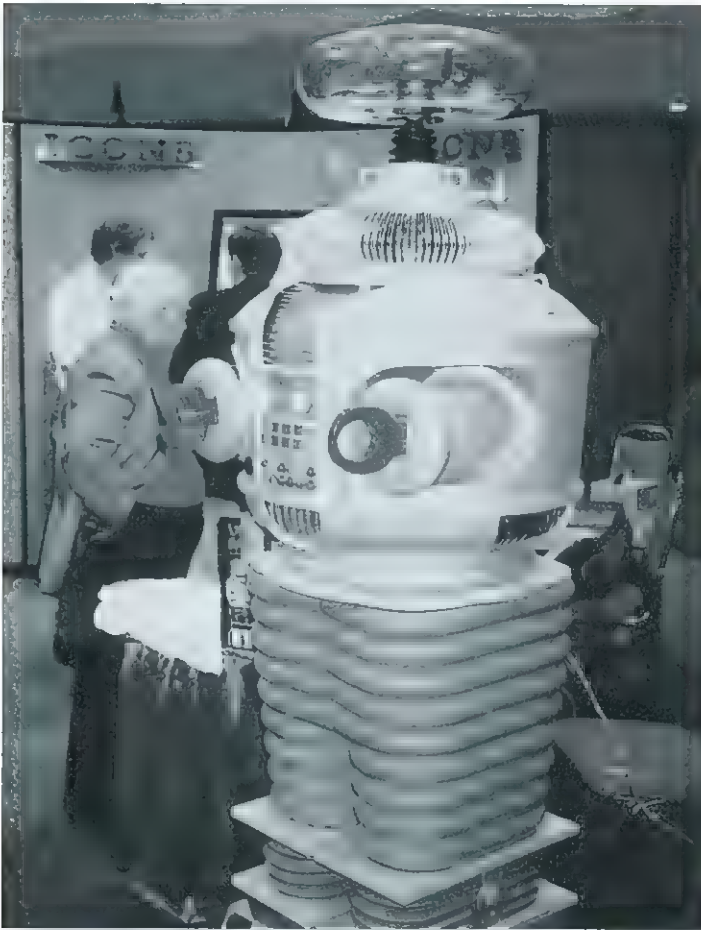
the most amazing sculptures I have seen. Most of the kits have been available for a while, but they never fail to awe me. *Avira* was the only kit that I had not seen before, but since I don't speak Japanese, I am not sure if it is new.

In the United States, *Fewture's* kits are distributed by *The Right Stuff Distributors*, who were on hand with 2 booths full of imported kits from the far east and places unknown. *Right Stuff* also carries many foreign action figures and dolls, including a new line of *James Bond* figures. For more information, call them at 626-968-1333.

Taylor Designs are predominantly known for their special effects work and pre-fabricated stop-



Above: *Space Girl* by *Simian Prod.*



Above left: Bob May and Icon's L.I.S. Robot. Above right: Ashlyn Gere and kit. Below left: Ripley by Geometric Designs. Bottom left: Explorers contest scratchbuild. Bottom right: Contest Spinner.



motion armatures for animation figures (like the ones Ray Harryhausen used), but they brought along several new kits as well. *Silverback* is a massive model of a gorilla which looks anatomically correct in every way. The huge kit sold out Saturday morning and buyers had to be satisfied giving orders for later shipment. Also new is a figure of adult film actress Ashlyn Gere, sculpted by stop-motion effects master Jim (When Dinosaurs Ruled The Earth) Danforth. Ms. Gere was on hand to greet fans and take pictures with her resin likeness.

Contact Taylor Designs at 702-254-8853.

James Hakola of G-Zero presented his newest creations, *Ballistic Rose* and *Goddess in Alloy*. Both kits are truly beautiful sculptures and original in concept and design. Jim sculpted the *Mach Angel* kit for Streamline a few years ago, another great original creation. Now he has his own company, which will insure his

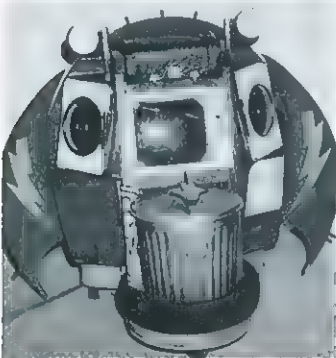
designs are cast and distributed more consistently. Watch for a review of *Ballistic Rose* in the next few months. To order these kits call G-Zero at (562)-493-2455.

Mike and Mary Elizalde of *Spectral Motion* also had a new offering. *Cedrick the Zombie* is the latest in Mike's line of original monster busts, which started with *Alex the Vampire* and *Boris the Werewolf*. Mike would have had *Cedrick* out earlier, but he has been working with Rick Baker on the effects for *Mighty Joe Young* for the last several months. This is a wonderfully nasty looking kit, abundant in detail and lovingly cast. Another great addition to the *Spectral Motion* line, contact Mike at 626-794-2827.

Also an FX professional, Michael Burnett showed up with several

additions to his line of busts including a *Gremlin* and a *Gill Man* creature. Michael also brought along some life-sized "friends", a *Mars Attacks* *Martian*, *Darth Vader*, a *Borg* from *Star Trek*, the *Maria* robot from *Metropolis*, and several other full sized reproductions. I have no idea what shipping costs for one of the monstrosities would be, but if you are interested in ordering, call Michael Burnett Productions at 818-768-6103.

The *Mad Model Contest* had many great entries. The highlight was an original baby *Godzilla* maquette, designed by Patrick Tatopolous for the *Centropolis* film, and painted by Geno Acevedo. Other outstanding entries included the "Drummy", an *Aurora Mummy* playing a 1:8th scale drum set in a wonderful Egyptian





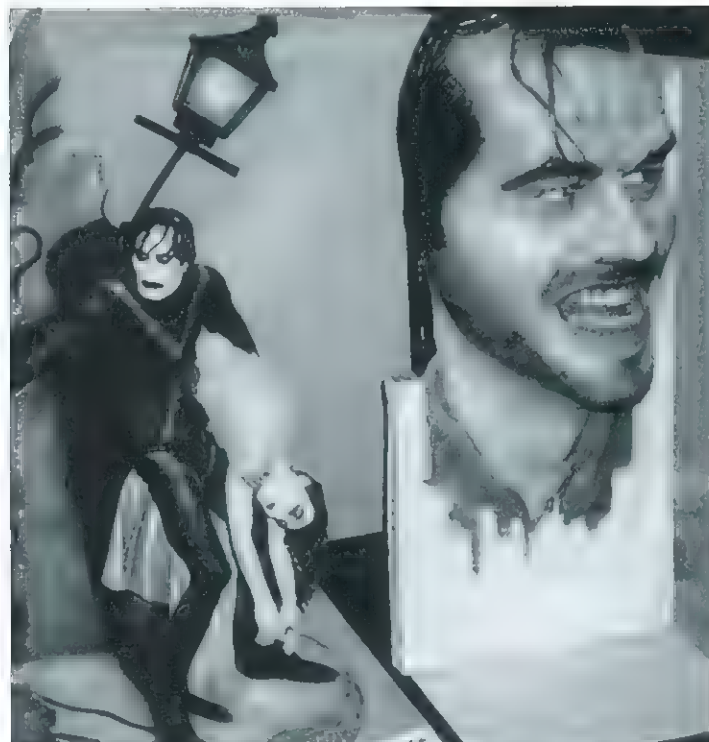
diorama, an awesome *Captain America* vignette featuring *Bucky* and *the Falcon*, and a fully lit *Spinner* from *Blade Runner*.

It's always fun to watch for celebrities at this show, and this year there were quite a few. Scanning the aisles I spotted film archivist and part time gorilla Bob Burns with his friends actors Daniel (Fugitive, US Marshals) Roebuck and Chuck (Soul taker, Double Blast) Williams, writer/director Frank (Shawshank Redemption, Mary Shelley's Frankenstein) Darabont, writer/producer John (Alien 3, TNT's Hunchback of Notre Dame) Fasano and Academy Award™ winning makeup artist Rick (American Werewolf in London, Mighty Joe Young) Baker.

Next Year's Mad Monster Party should be great fun as well! Stay tuned to my regular column for information as it becomes available.

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This page: several of the contest entries exhibited this year. Inset: *Goddess in Alloy* by G-Zero.



"...It's how long?!"

A review of A-B Models' Thunderbird 4 kit.
Simon Roykirk.

Several weeks before the latest in a series of giant kits from prolific garage kit manufacturers A-B Models arrived at these offices I was chatting on the 'phone to them about their forthcoming release, Thunderbird 4. They gave me a little advance information on the kit which I duly scribbled down. As I put the 'phone down the phrase "thirty one and a half inches long" kept surfacing in my head. Surely, I reasoned, there must be some mistake. Thirty one and a half inches long... The thought niggled and niggled until I was forced to ring them back. "Um... your TB 4", I asked. "...Did I hear you say that the kit will be thirty one and a half inches long?"

"Yes," they replied, "You did..."

A few weeks later the review kit arrived in the type of box I'm now used to receiving from A-B – namely, a *huge* one. Inside were thirty six near flawlessly cast pieces – the largest part count to date for an AB subject. The body builds up from resin left and right main halves; a nose section with front insert; rear engine nozzles; a top intake cowl with integral fin; left and right upper intake cowlings; lower intake cowlings; front and rear intake grills and the front light trough with arms, pivots (wooden dowels) and a clear front section. The detailed interior comprises a cabin rear wall; floor and console; pilot's chair; headrest; headrest strut; control column and "handlebars", and an aquanaut figure with separate arms in *International Rescue* uniform. A vacform canopy – again, near flawless – is also supplied, together with a six page instruction sheet,

cutaway diagram and a crack-back paper decal sheet.

Assembly

Any excess resin is indicated by a "ridge" around parts which need trimming. Two such pieces are the main body halves, the inside edges of which need trimming before the front end can be cut back to the thickness of the resin to create an open area into which the cabin rear bulkhead later fits. A-B recommend that *superglue* be used throughout, but, excepting smaller joints, I much prefer two-part epoxy, as I find *superglue* has little torque strength whilst epoxy will withstand the slight (and not so slight) accidental knocks a large kit of this type might receive whilst being manoeuvred in small areas. The cabin bulkhead has been roughly cut to shape but is oversized. This therefore needs to be carefully "reduced" to match



This page and opposite bottom left: the completed A-B giant Thunderbird 4. Note detailed cabin and Gordon Tracy figure.

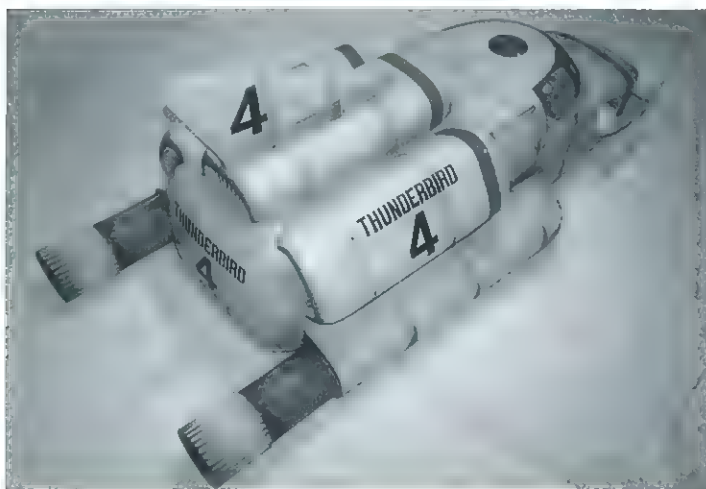
the dimensions of the open end of the main body by removing material from the edges of the piece until a snug fit is obtained. The bulkhead is then recessed 30mm inside the main body and glued in place.

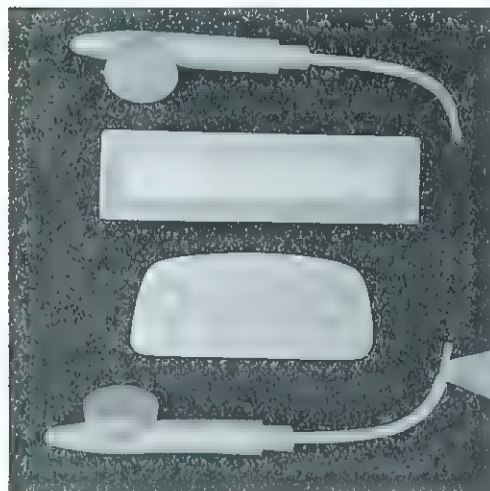
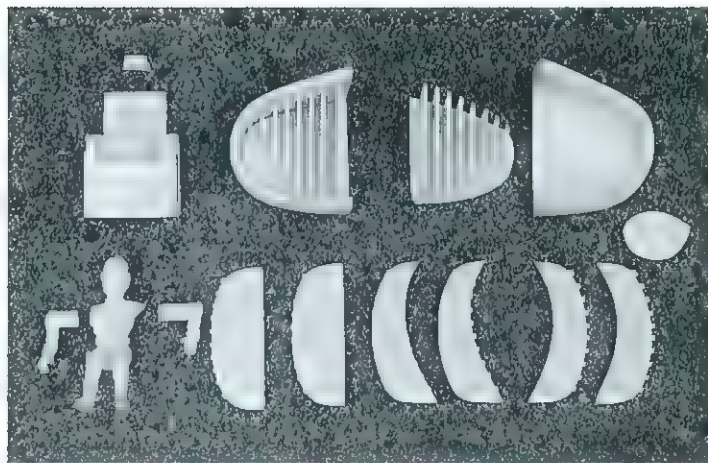
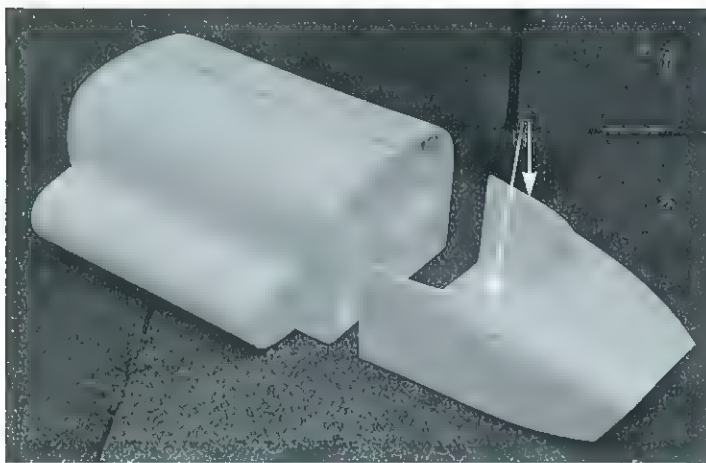
The nose section is now test-fitted. Again, excess resin needs to be removed from the open end that joins to the body, and the semi circular upper area over which the canopy will later sit has to be cut away, leaving an edge corresponding to the side wall thickness on the body so that the canopy can locate against this. At this stage the nose insert, which is moulded complete with four tube "nozzles", is glued into the recess at the front of the nose.

The cabin floor with integral console needs to be carefully profiled

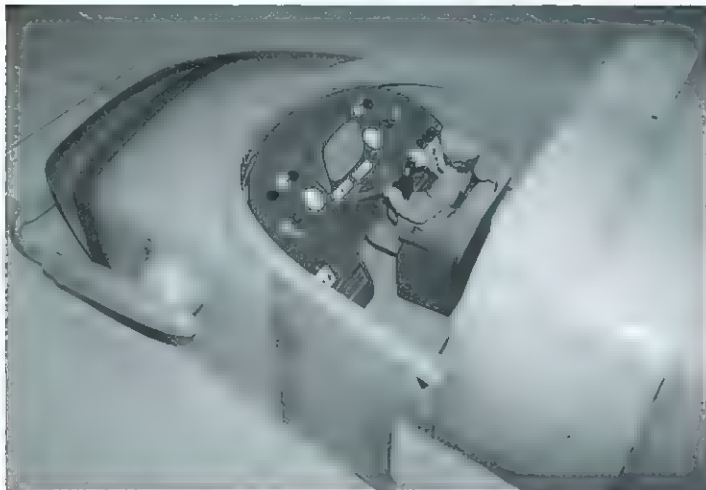
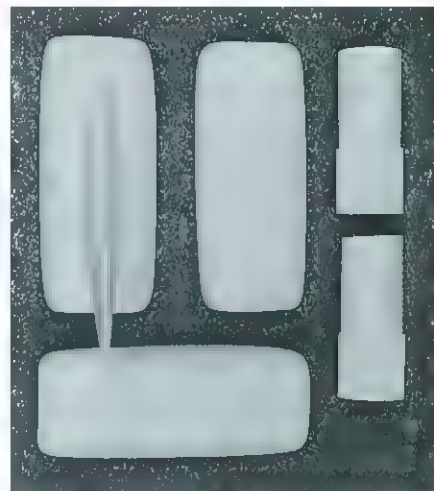
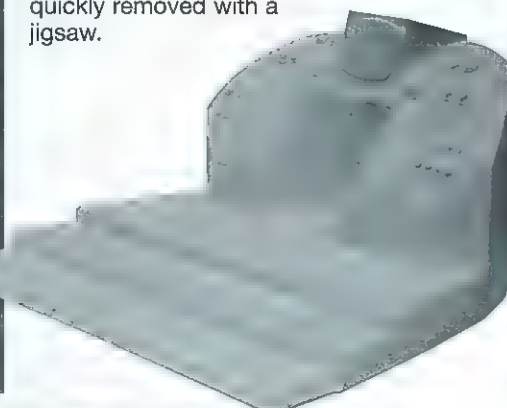
to match the internal dimensions of the nose section and a 3mm diameter hole drilled into it to accept the control column, the position of which has been marked by an indent on the front recess of the console. The floor then glues into a slot on the rear wall and the nose section and left and right lower intake cowlings can be glued in place.

Working back to a marked ridge, excess resin (minimal) is removed from the top intake cowl, which is moulded with its fin already in place, and this piece is precisely lined up by following detailed positioning instructions. Left and right hand upper intake cowlings are test fitted and some shaping of the inset edges that mate to the main body is required at this stage, but, again, the instructions give very specific details

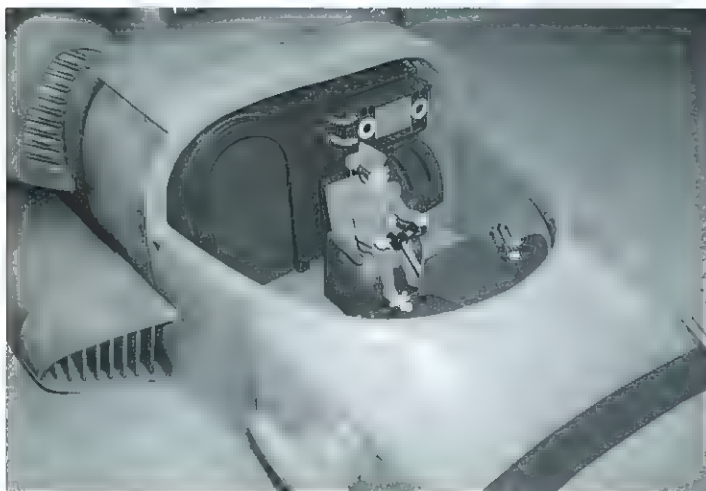




Top left: assembled main body halves with bulkhead added – cabin-front (indicated) comes as a raised area of resin, which was quickly removed with a jigsaw.



Top right: seat, figure and inlet grill pieces.
Above left: nose insert and light trough components.
Inset: the highly detailed console/floor section.
Above right: engine cowlings, fin and boosters.



as to how you can accomplish this simply, using the front and rear insert grills as templates prior to fitting the two cowlings. Following cowlings and grill assembly the twin rear engine nozzles locate quickly and easily into positioning recesses on the main body.

Light trough

Holes need to be drilled in the pivot points of the two light trough arms and also through the side walls of the nose section, their positions identified by indents on the surface of the resin. The arms will eventually be held in place by the wooden dowels provided. Holes must also be drilled into the sides of the light trough itself, which can then be squeezed between the positioned arms. The clear face of the trough and the trough/arm assemblies are put aside ready to be fitted following painting.

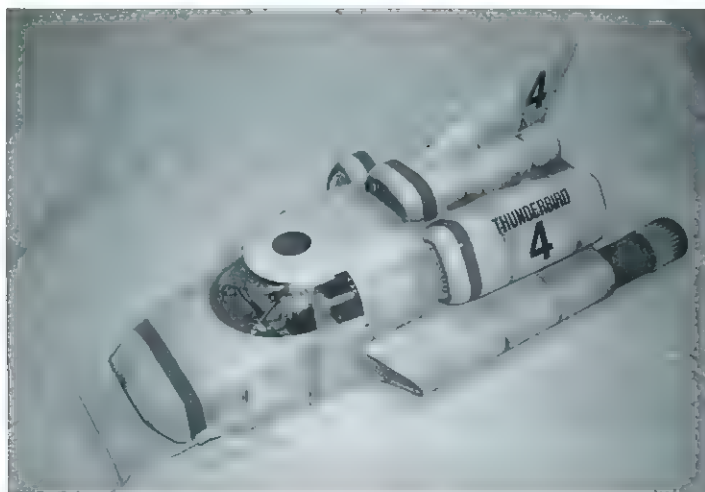
Gordon Tracy

A superb, action-figure sized "aquanaut" is provided with this kit. To assemble him you first need to be brutal – cutting his hands off his arms at the wrists and relocating them at a 90 degree angle so they

can "grip" the control handlebars later. The arms are then glued to the figure and any gaps filled prior to priming. Next, indicated recesses on Gordon's chair are carefully cut away to create armrests on either side. A 1.5 mm hole is drilled in the top of the backrest to accept the headrest strut, with a corresponding hole being drilled into the headrest. The piece of aluminium rod provided as the strut is now bent into a "Z" shape using a pair of pliers and the chair components are glued together.

Into the rear of the central disc on the "handlebar" assembly a 3mm hole is drilled to accept the control column. This assembly is then test fitted into the previously drilled hole in the console, the overlong column is cut to the correct length and the assembly glued in position. Most cockpit details are faithfully reproduced. Perfectionists might like, however, to add round-headed pins to duplicate the levers shown in the cutaway drawing.

Finally, the clear cockpit canopy is trimmed to match the profile of the main body and nose section



Red stripes were added following careful masking. Weathering with an airbrush completes *Thunderbird 4*.

and placed to one side for final assembly following painting.

Painting

The model is primed and painted using the colour box print as reference, with sub-assemblies such as *Gordon Tracy* (light blue uniform; orange sash, belt and boot tops); the canopy (which needs to be carefully masked); the light trough (chrome tape needed on the interior) and intake grilles being painted separately and added to the model as a final assembly stage (use non-fogging glue to fix the canopy in position). Many reference shots for interior colours still exist, and can be found in annuals of the time (still lurking in the depths of many specialist shops) and in some of the "new" titles published on **Thunderbirds** in the late eighties. Panel lines are accomplished with a black ball point pen and final weathering applied via either graphite and a

finger or an airbrush. As with all TB craft, weathering on *Thunderbird 4* was subtle (except in a couple of episodes where the craft is absolutely filthy!), so don't overdo things if you want a faithful replica. Finally, the self adhesive lettering is carefully cut out and stuck on. An improvement with this kit is the addition of a spare set of "Thunderbird" letters which allow you to use them as a spacing template for your cut-out decals.

Appraisal

A-B models' three subjects so far – *Thunderbirds 1, 3 and 4*, show an enthusiasm for their art and a level of respect for the garage modeller that should be established by law as standard practice throughout the industry. Instructions are detailed and precise. Parts are exceptionally well moulded, need little filling and sanding and have been

SF & F Pocket Guide

Thunderbird 4. A-B Models. Resin kit with vacform canopy.

Value for money (£299.00):



Ease of assembly and instructions:



Required for standard assembly:

Files, filler, two-part epoxy glue, superglue, non-frosting glue, pliers, drill and drill bits in 1.5, 3, 5, 6.5 diameters; scissors; scalpel/modelling knives; masking tape; chrome tape.

Paints: High build primer; yellow, red, black, silver car sprays.

Review kit kindly supplied by Comet Miniatures

thoughtfully designed to fit together near perfectly when instructions are followed. Lastly, the kits are presented at a jaw-dropping scale that can't fail to impress friends, family and, of course, *yourself*. *Thunderbird 4* is highly recommended; it's giant size and accurate contours making the £299.00 tag seem a small price to pay for such a mammoth subject.

Their next release – a twenty two inch long *eagle*, depicts my all-time favourite Anderson craft. I am already drooling in anticipation...

S. R.

Big Cats...

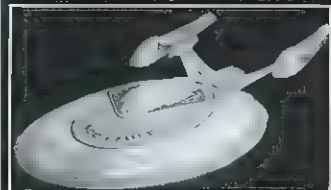
The alien *Kilrathi*, as featured in the new movie **Wing Commander**, were realised as exquisite animatronics by Shepperton Studios' *Animated Extras* FX house. Next issue *Animated* will tell you just how they went about creating this very alien race...

Big Names...

We visit the California-based FX house of *Greg Cannom Creations* and chat with Greg about the classic makeups he has created over the years for such hit movies as **The Mask** and **Titanic**...

Big Projects...

...The definitive garage kit?? At last it's here – the 22" long *Eagle* from A-B models. We take an up-close look at one of the most eagerly anticipated limited run subjects ever to be produced...



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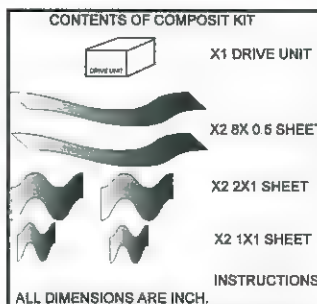
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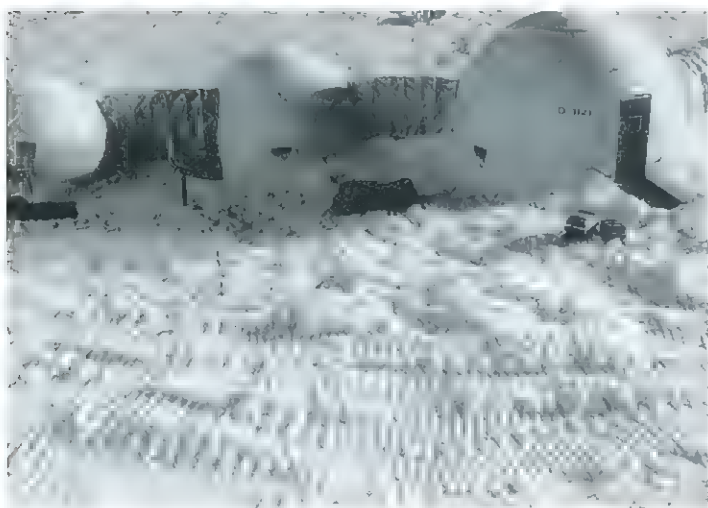
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The Making of the Miniature Effects for Twentieth Century Fox's "THE X-FILES"

Jim Key



THE TRUTH IS OUT THERE' is more apt to be 'THE TRUTH IS DOWN THERE', which in many ways sums it up.

Like many who went to see this summer's long awaited release of **"THE X-FILES"**, I felt vindicated for staying loyal to my beliefs about what the original TV show was born out of. I would like to thank Chris Carter for taking a stand on the issue of whether extraterrestrials were, in fact, part of **The X-Files'** planned reality. By not giving us too much visual, spoken, or otherwise implied information, he and Co-writer, Frank Spotnitz, remained true to the show's philosophy of hiding all the clues in plain sight. More expansive as a movie, it manages to retain that 'film-noire mystique' created for the TV series.

Part of that 'mystique' has been to ground the series in some plausible reality, though at times that reality is little more than an illusion, skirting the plausible razor's edge. Still – no matter how 'spooky' *Mulder* may think that reality to be, we always 'want to believe', even if *Scully* doesn't. One would have to conclude that the real mystique' of 'THE TRUTH IS OUT THERE' is, at

best, an elusive matter of perception. It is something that has undoubtedly kept us asking, 'WHERE OUT THERE?'

'THE TRUTH IS DOWN THERE', down in Antarctica, down in that glacial valley, way down under that ice-flow, down underground in that darkness, down in that illusive nether-world between reality and unreality. It's down there alright, holding onto deadly secrets it has acquired from all corners of the globe; secrets so terrible and incriminating that they are worth killing innocent children, and razing occupied buildings for. And ultimately, for those in pursuit of the 'TRUTH', assimilation and elimination.

In the end, as the 'TRUTH' arises, was it worth finding out? Apparently so, since it meant thwarting assimilation and eliminating the alien threat to our homeworld, at least for a short while longer. After all, *Mulder* and *Scully* do save the world. Something every fan routinely expects from the paranormal duo.

In and of itself, **"THE X-FILES"** was a fun, roller-coaster ride through the bizarre nature of 'what-ifs' that nag at our collective growing belief as a society, that perhaps everything implied, might actually be real. Real or not, one aspect is definitely the fine art of illusion, that being the careful balance of mixed mediums used to create the special Miniature 'X' Effects.

Enter Special Agents Virtual and Physical

To those of us who are in the business of creating 'physical-illusion', it is comforting to see, particularly in the last two years, how the industry has taken care to embrace and support the union of virtual (computer-generated) effects with the proven, more traditional physical sets and miniature effects. Years ago it was believed that virtual would quickly replace physical, eliminating it altogether. Nothing could have been further from the truth and that narrow-minded view almost derailed the obvious. By combining, instead of opposing, these two mediums' total was greater than their respective own sums.

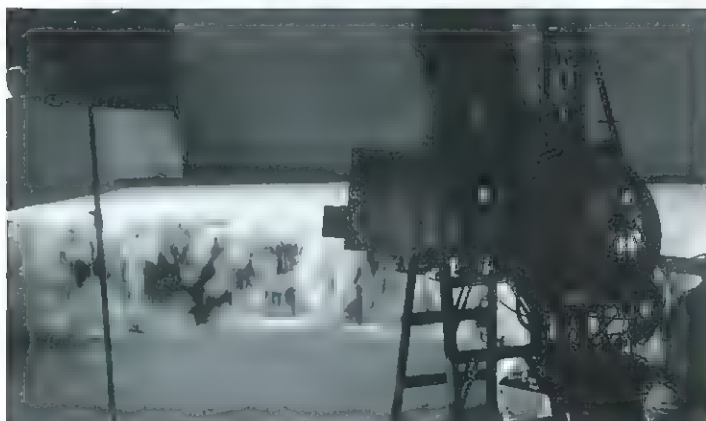
Following the lead of other recent spectacular visual triumphs such as **Titanic**, **Alien Resurrection**, **Starship Troopers**, **Godzilla**, **Deep Impact** and **Armageddon**, **"THE X-FILES"** makes no less the effective use of these combined mediums. Although not quite as dependent on its special effects, opting to rely more on its character portrayals, the movie chooses the use of its effects wisely. Special agent 'virtual' was called in to help special agent 'physical' in creating some breathtaking scenes centering around the demolition of a Dallas federal building, Antarctic ice-station, glacial ice-fields, and a fearsomely huge alien flying-saucer. There

was also the insertion of an 'off-the-shelf' HO scale train set, filmed at a distance, proving that even low-tech solutions are just as valid as expensive, highly designed methods. The virtual partnership has allowed the physical to be simpler in some cases, employing CGI as a 'cosmetic' make-up for certain types of scene construction. The two mediums have indeed become much like *Mulder* and *Scully* themselves; equally attractive to each other and the audience they seek to entertain. Combined, they are the perfect compliment.

Miniature 'X' Effects

To get the numerous miniature effects on film, *Ten Thirteen Productions* contracted Blue Sky|VIFX, a full service digital animation and visual effects studio capable of integrating cutting-edge computer graphics with highly specialized physical effects such as sets and miniatures. Blue Sky|VIFX were also chosen for their established reputation for being able to deliver complex scenes using a new technology known as 3D tracking, which frees principal photography from doing motion control in the camera, making it less expensive and time consuming. Recent work where this technique is evident includes the engine room scene in **Titanic**, and the matched movements of the *Kothoga* from **The Relic**. And who can forget their integrating of the computer generated alien into the underwater scenes of **Alien Resurrection**.

Under the direction of the film's Visual Effects Supervisor, Mat Beck, the task of producing the miniature effects was divided amongst Blue Sky|VIFX's Senior Visual Effects Supervisor, John Wash, and Miniature Effects Supervisor, Scott Schneider. Joining them as Special Visual Effects Consultant was Bob Spurlock, former co-owner of *Stetson Visual Services*



Glacial ice field sequence. Note the unfurled cloth, used to create a matte for hiding fallen debris. Photos: Logan Payne. Opposite page: The ice station miniature. Photo Logan Payne. © 1998 Twentieth Century Fox. Image courtesy Blue Sky/VFX.

model shop. Together this trio would be challenged with guiding and resolving the many miniature effects seen throughout the film.

Recalling the events that brought Blue Sky/VFX into this project, John Wash stated, "Mat (Beck) made a logical division of the material on this project. His company (*Light Matters*) would handle the opening effects of the boy's oily eyes and worms, as well as the interior of the spaceship. "We were assigned the demolition of the *Hunter/Gratzner Industries'* 1/8 scale federal building miniature, the CGI bees, tanker train arrival, and the conclusion of the movie, involving the glacial fields and alien saucer."

Additionally Blue Sky/VFX produced many CGI elements, inserts, and final composites that work, both in support of the miniatures and throughout other areas of the film. For purposes of clarity regarding this article, coverage will be focused on their production of the miniature special effects.

Knocking the pins out of HGI'S 1/8 scale federal building

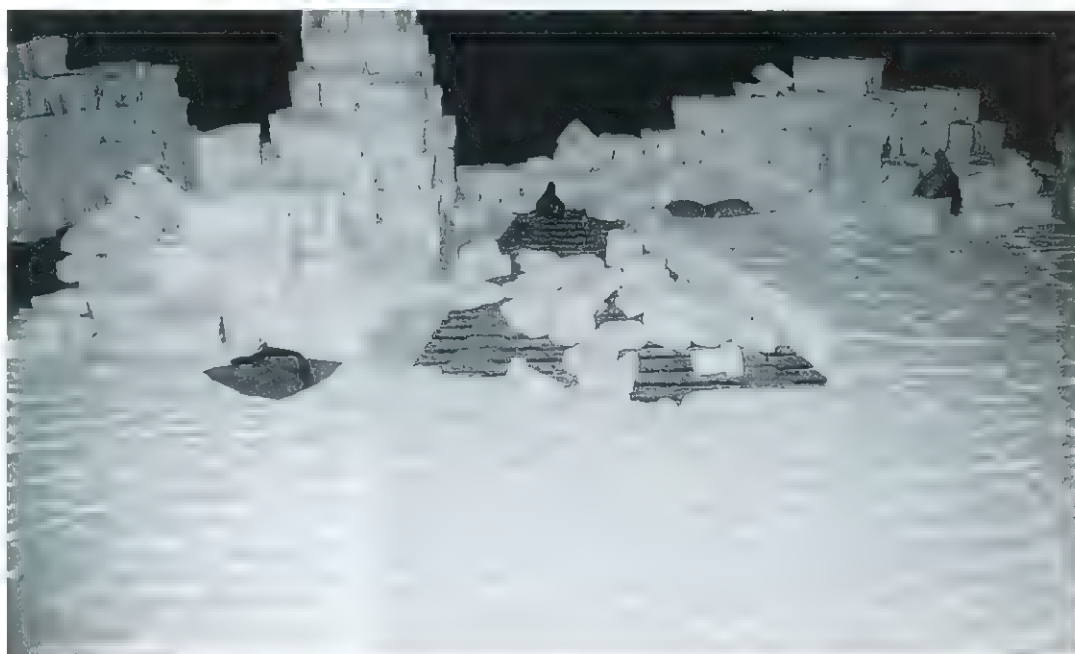
The first visual effect that John Wash and his team at Blue Sky/VFX worked on was the filming and

compositing of the false facade seen dropping into an exploding fireball, right after the moment of ignition. To achieve this first of three major shots, Wash and his crew set up their camera directly atop a 23 foot high miniature of the doomed Dallas federal building, built by *Hunter/Gratzner Industries*. By positioning the camera in the same orientation as the background

plates shot at the downtown Los Angeles *UNOCAL* building, they were able to create a match by which the miniature facade could be inserted. After careful design by Bob Spurlock, followed by timing tests, pyro-specialist, Ian O'Connor, successfully dropped the miniature facade at just the right instant so it could be seen breaking apart into a cataclysmic fireball set off at

the base of the building, all of which was captured through high-speed (96—120 frames per second) *VistaVision* photography.

This scene serves as the trigger for the following wide shot where the fireball continues to grow upward as the building's floors and debris rain down. The final shot on the building was perhaps one



Laying out some of the 2,000 plus foam ice-blocks needed to create this effect. Photo: Tamara Waters. © 1998 Twentieth Century Fox. Image courtesy Blue Sky/VFX.



Above: Movie frame of the glacial ice field.

Below: Close-up of saucer brass etch designs. Photo: Mike Possert. © 1998 Twentieth Century Fox. Image courtesy Blue Sky/VIFX.

of the trickiest. It is the scene where the camera pans past *Mulder* and *Scully*, revealing the aftermath of the explosion. This was achieved with computerized match-moving. "Our job was to insert the miniature of the building into the scene," Wash explained. By taking all the moving and tracking information from the First Unit principal photography of the actors, the miniature of the federal building could then be shot using the exact same move, thus creating a seamless match.

According to Beck, "The audience will get the impression that they watched the building blow up, but it never really does. The miniature was built with a huge chunk blown out of it already."*

The 1/8 scale Dallas federal building miniature features a semi-demolished exterior based in part on research gathered from

the tragic Oklahoma City Murrah federal building bombing. Built over a steel frame, the miniature is covered over with real drywall, clear plastic windows, intricately interspersed scale fragments of rebar, broken concrete columns, fractured ceiling tiles, destroyed furniture, all dressed to resemble actual interior offices. Onto some of the walls of these offices were placed tiny clocks and calendars, set to the date and time the explosion occurs in the movie.

In designing the miniature, it was felt that, since most of the destruction occurs on the left side, the right side need not be built in full 3D. Therefore, it was constructed as a wedge, with the right side being the tapered end.

Ice-station 'X'

Just prior to the climactic conclusion

of the movie, we see the *Cigarette Smoking Man* get out of a snow-cat and enter the main dome of the pre-fab ice-station. Once inside we are privy to the fact that this station secretly serves as an entrance way into the subterranean alien world. Then, as *Mulder* rescues *Scully* from this dismal, inhuman prison, it begins to fight back, wrecking everything and setting off an irreversible collapse of the glacial ice-field.

As the encampment breaks up, sending all its inhabitants off in a crazed scurry, we are treated to a few brief shots of where everything above falls below. This quickly edited together group of scenes is the result of an eight by ten foot table top miniature, with CG steam and cracks added.

Built at Blue Sky/VIFX's model shop under the direction of Miniature Effects Supervisor, Scott Schneider, the task of creating this miniature was given to lead model builder, Logan Payne, assisted by Mike Possert, Dave Chamberlain, and Kurt Zendler. As to the process, "They had a bunch of photographs that were taken on location of the actual set, showing the domes, antenna, and equipment surrounding the camp. We also had a very general blueprint of the layout of how the domes were positioned, comparable to the actual set drawings," Logan explained. "A lot of what we had to do was figure out the size and scale of everything. The information had to be discerned from the photographs. This is particularly true of the surrounding items, such as the cases and sleds. So, by comparing one object to another known object, I was able to figure out the relative scale of each item," he added.

"I was tossed the task of figuring out the ice-domes, which apparently are a real product used by the military, of a pre-fab design, taken out onto location and set-up with relative ease," Mike Possert commented. "They are made out of disks that have a slight spherical curvature, which are held together with rivets," he further explained.

From the conversations I had with the crew, it was clear that master patterns for the domes were created out of overlaid vacuum-formed plastic shells. From these, RTV rubber molds were made, into which 1630 casting resin was poured and eventually backed with A/B expanding foam. This made all the castings durable, capable of taking a drop from a

height of six feet. This, of course, was true with all of the parts. Some were even made out of brass, such as the sleds and communications antenna, painstakingly assembled and brazed together by Dave Chamberlain. Other smaller pieces, such as the cases, were poured up solid out of regular casting resin.

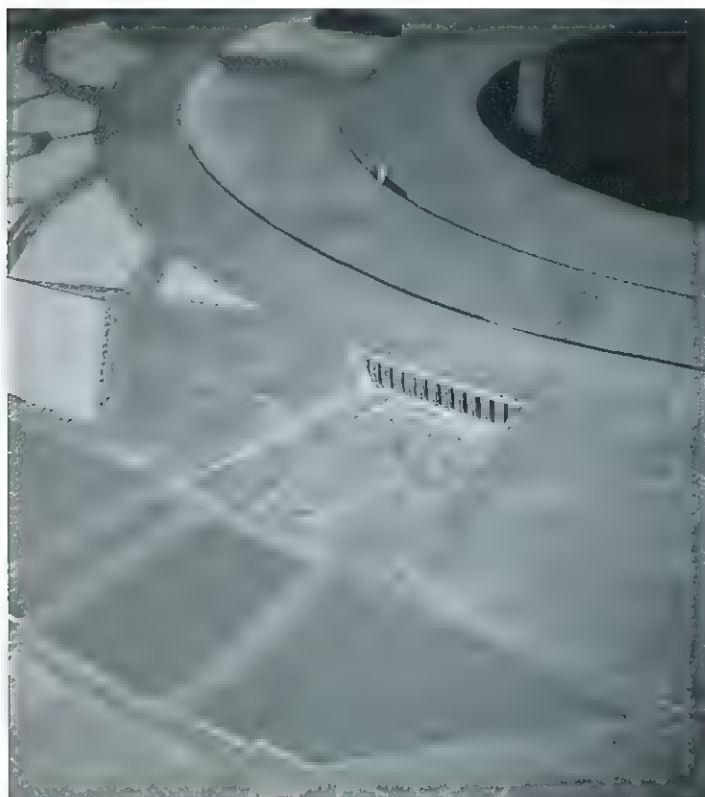
After giving these pieces a very basic paint job, they were set aside as construction on the drop away table began. I asked Logan Payne to explain how the table worked. "What we ended up doing was building the set about six feet off the ground, and putting a sliding door up on top of this plywood table. The sliding door was then on a track, much like the way a dining room table opens, and you remove the leaves. Onto these doors we attached ropes at both ends, and two people would literally pull the halves apart on cue. It was a low-tech solution that worked great." In support of Logan, Mike had this to offer, "It wasn't exactly 'repeatability', though it was close. There were aspects from each take that, when edited together in cumulative fashion, the sum of all the parts looked great on film. This process also allowed for rapid redress. We could set up the miniature, re-distribute the salt snow, lay in the tracks, all in about an hour, and be ready for another take."

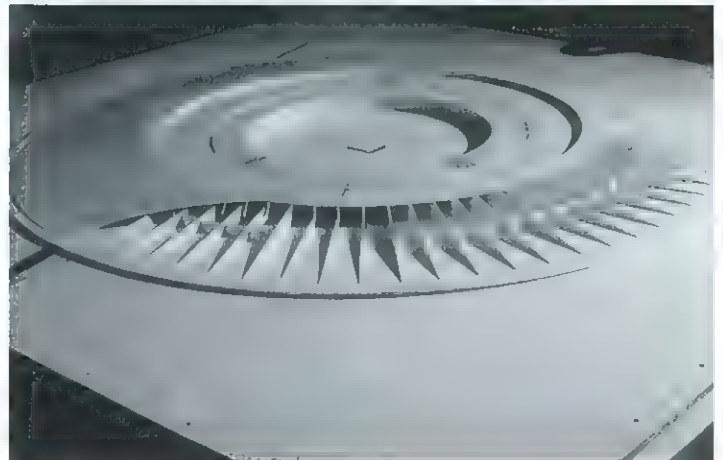
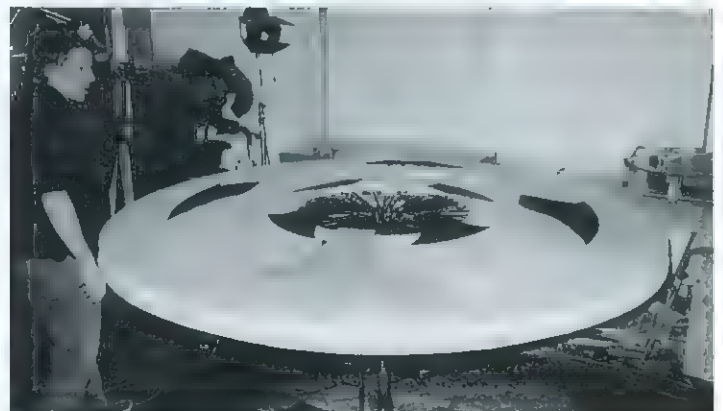
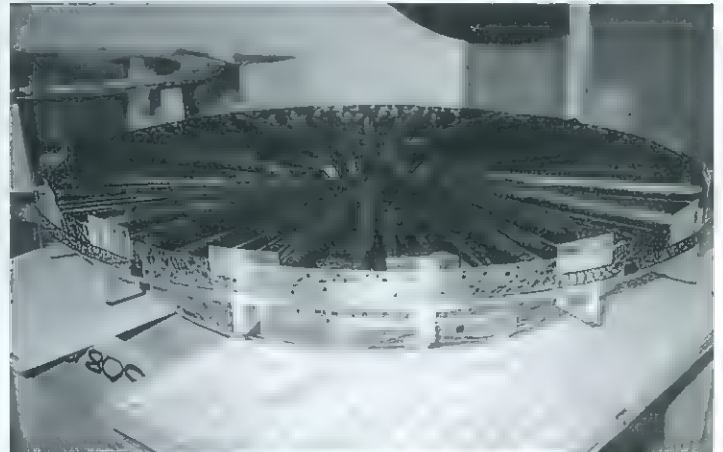
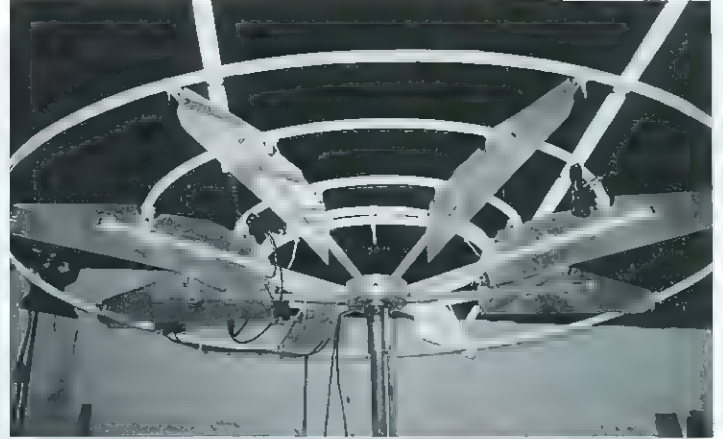
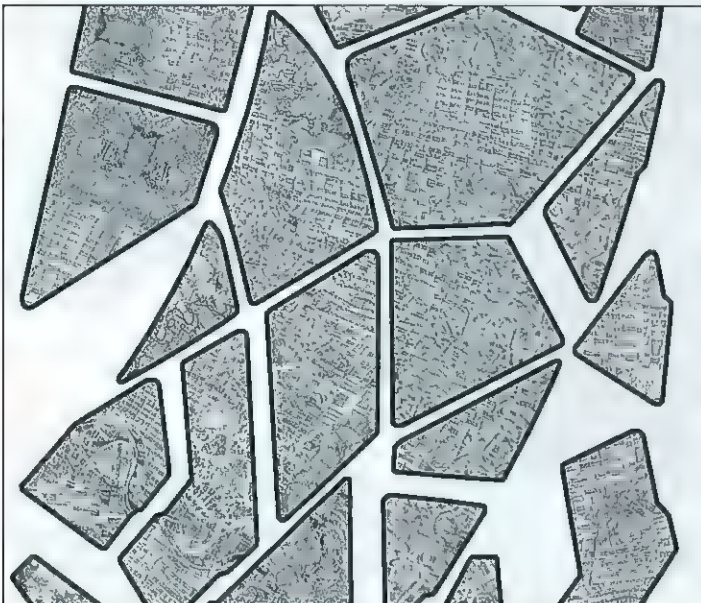
The final dressing on the miniature was, in fact, the snow. Made from a mixture of dry salt, hair gel, and sometimes baking soda, it was spread over the entire surface of the table. To make the tracks, a section of scale *Plastruct* siding material was laminated onto a small roller then carefully guided through the salt to create the many pathways seen.

The collapsing ice-field

This miniature effect almost defies what one would term 'a miniature effect'. However, since the scale is somewhat hard to determine, the ice-blocks are said to be smaller than one perceives them to be in the film. The conclusion is that based on that perception, anything built small to represent something larger qualifies as 'a miniature', even if it is twenty one feet across the front and fifty eight feet across the back.

I asked Scott Schneider what his concerns were in preparing the design of this effect. "Mat (Beck)





Top: How the image for the texture maps was generated as a Photoshop file.

Above: An image sent to the acid etchers.

Right (top to bottom): Six foot diameter of saucer armature, revealing the numerous neon light fixtures. Photo: Mike Possert. Saucer central detail showing piping structures. Note the ring of etched brass which was incorporated to produce "moving shadows". Mike Possert.

Miniature Effects Supervisor, Scott Schneider, conducts a lighting test on the miniature, just prior to final painting. Photo: Mike Possert.

and John (Wash) were convinced that CG would not be able to pull off the job, at least in the amount of time and money that they had. Then there was the figuring out of the size and scope of the ice-field, as well as working out a method for doing the collapse effect," he began.

"The first thing that happened on the ice set was coming up with a technique for the 'look' of

the ice. We needed a method that would allow us to make enough of it to pull off the desired effect, yet not take forever to make the amount we needed," Scott recalled.

Through much experimentation, the crew of Dave Schwartz, Tamara Waters, Alex Watts, Susan Jasionowski, and Jeff Cuppernell went through a couple of months to carve out what ultimately

became a couple thousand individual pieces. Each block was cut from huge chunks of white styrofoam. Using a 'hot-wire' as the efficient tool of choice, the crew cut endless random shapes, all scaled to a 'general size' that could be interlaced

together when finally assembled.

In talking with Tamara Waters, she explained the exact formula regarding how these blocks were then 'treated'. "All of the blocks had to be coated with stearic acid,

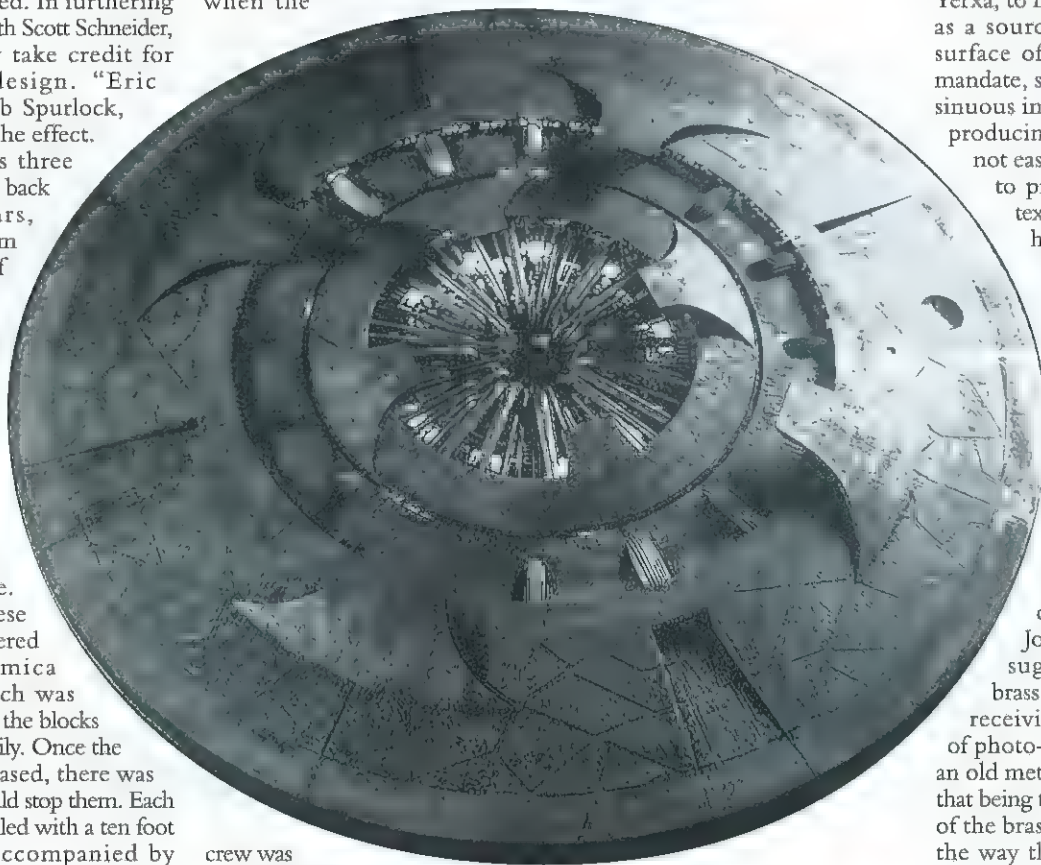
which is like wax, tinted with blue to make it look like real ice," she described. "All of the pieces were cut with a slight angle, so when they were all fitted together, they would form a gentle arc over the entire distance. This was done to mimic the curve of the hole that was opening underneath them," she revealed.

Engineering the effect was a bit more involved. In furthering my discussion with Scott Schneider, he would only take credit for part of the design. "Eric Haraldsted, Bob Spurlock, and I designed the effect. Basically it was three tables which slid back into stop bars, allowing the foam blocks to fall off the receding edge. To achieve the right look, we had these tables going off at predetermined angles so as to create the illusion of an outwardly expanding hole. The tops of these tables were covered in white formica masonite, which was very slick so that the blocks would fall off easily. Once the tables were released, there was nothing that would stop them. Each table was controlled with a ten foot air cylinder, accompanied by water soluble oil to control the release rate, or pull-back speed. All three tables were linked synchronous, so they would all pull back in unison."

Once the tables were constructed and tested, then came the arduous task of placing the blocks onto them. Once again I asked Tamara to help fill me in on the procedure. "All of these pieces were lined up together, working from the back of the tables to the front. Then we took white Christmas paper, a sort of tissue, and tore off little pieces to be laid in-between the blocks. In a sense, this became the 'ice-mortar', which was misted over lightly with water, so the hair-gel and salt/stearic acid mixture wouldn't dry out and crust over. After the salt mixture was added, everything had to be painstakingly smoothed out with a feather duster, so it would have that undisturbed, natural look. This was an exhausting process. Sometimes we had calls as early as 4:00 a.m., so that we would have

the set dressed by the time the film crew arrived and got ready to shoot. About ten to twelve hours of 'on your hands and knees' type of work," she confessed. This process I later found out was repeated on upwards of 15 times!

I asked the crew if they had any unique memories about this set up. Tamara and Scott both remembered the time when the



crew was testing the vent or steam effect, "Sometimes we would get as far as calling 'Speed!', and then have to immediately cut because steam had fogged the camera lens so bad it couldn't see the action," she laughed. And, in a separate instance, they went to activate the vents only to have brown water spray out all over the camera, forcing them to cut, move the set-up and start over. This happened because there were a few shots where the camera was right on the front edge, level with the ice field.

This effect is really the result of motion controlled moves, shot at high speed to give the ice blocks a sense of weight and scale. According to Scott, "We were rolling between 120 frames per second on the motion controlled cameras, and 120 to 250 frames per second on the photosonics."

By and far, the collapsing ice-tables were, in fact, the most complicated of all the effects Blue

Sky|VFX had to produce. Additionally, because the rearward directional shots were so hard to get right, John Wash resorted to having the CG team add cracks and fissures along the receding edge to help give the necessary clarity production was wanting. On the whole the effect was a huge success, setting up the climactic conclusion of the movie.

'Blackwood'

Early on, during the pre-production, it was reported that Chris Carter had wanted to assign a code name to the project, specifically as a reference to hide the alien flying saucer. Originally the favorite contender was "The Black Project", which was felt to be more revealing than elusive. Somehow, in the mix of things, it became "Blackwood", probably because of the simplicity of how it described the ship. Either way, it is very in keeping with the mysterious tone that has defined *The X-Files* TV show from its inception.

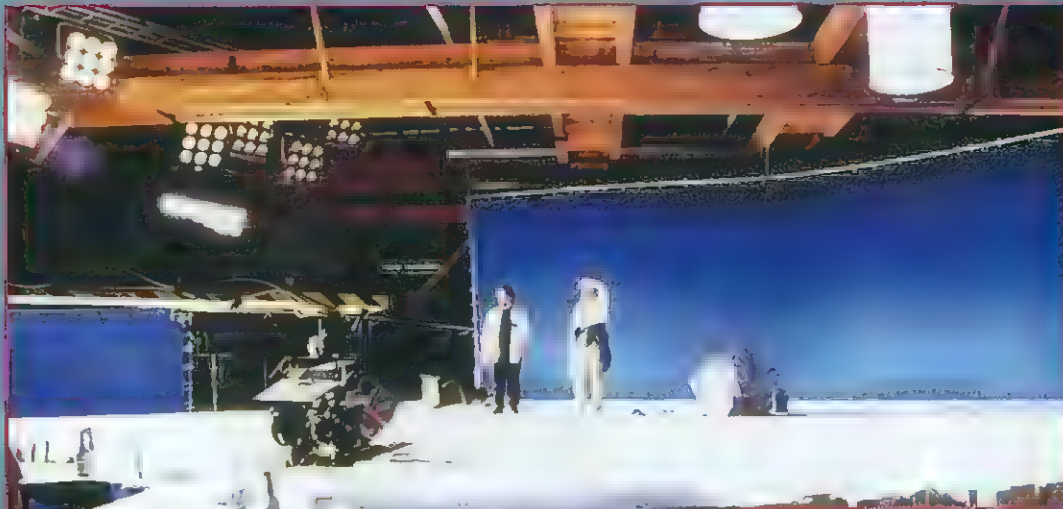
Right from the start, Chris Carter told Mat Beck that he wanted a saucer that was reminiscent of an older, 1950s' type, somewhat smooth in design. After much discussion, Mat Beck was able to convince everyone involved that, upon closer inspection, the saucer should reveal a highly sophisticated look, perhaps through its surface texture alone. The

initial design was roughed out by conceptual artist, Tim Flattery. This design featured the basis for what would be refined several times, over what would amount to several months.

With a basic silhouette hashed out, Mat Beck took his refined concept of the saucer into Blue Sky|VFX's CG department and asked their art director, Alison Yerxa, to investigate patternwork as a source of texturizing the surface of the ship. With that mandate, she began to search out sinuous imagery in the hopes of producing a 'sophisticated' yet not easy to recognize pattern, to present as a source for texture mapping. Through hard work and luck she happened upon some aerial maps in a book about Morocco. By scanning these high altitude images into her computer, then converting them to gray scales, the texture source was now ready.

Scott Schneider, in discussing the construction plans with John Wash and Mat Beck, suggested using etched brass as a material capable of receiving intricate amounts of photo-lithography. By using an old method in a different way, that being to create patterns on top of the brass instead of etching all the way through, they in effect created a very unique 'printing-plate' type of panel. This photo-mosaic could then be assembled into a centrally radiating theme and attached to the surface of the physical model.

The next problem to solve was just how big to make the miniature. According to Scott, they made three sets of mock-ups, one at four feet in diameter, another at six, and a third at eight feet. Through camera testing with different millimetre lenses it was determined that the six foot diameter would suffice. Now it was just a matter of executing the plan. Except for one small glitch. No one had calculated transferring the 2D views of the brass onto a gently curved 3D surface. By making some modifications to the computer-rendered brass files, the artwork was re-calibrated to fit snugly over the given physical profile of the saucer's surface. Ultimately, the brass etch patterning had become fully realized, creating a truly unique and different surface.

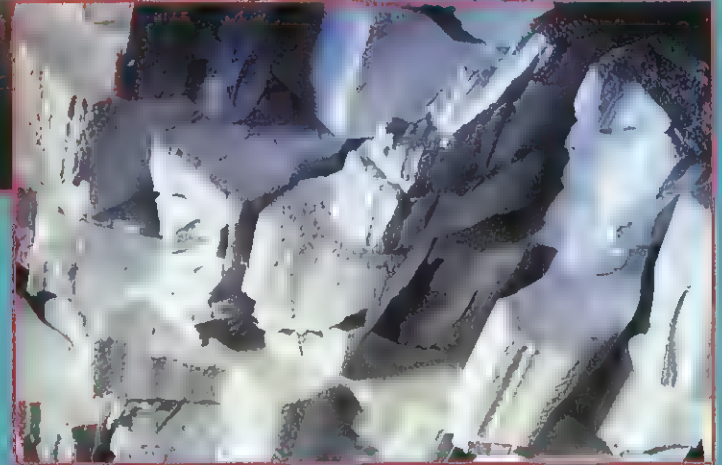


Opposite page: Beauty shot of miniature from edge-on.
Left: Jeff Cuppernell and Susan Jasionowski prepare the ice-field for camera.
Below left: Steam vent being filmed on surface of ice-field.
Below: Close-up of foam ice-blocks.

Above are © 1998 Twentieth Century Fox. Image courtesy Blue Sky/VIFX

Bottom: Aftermath of Federal Building explosion, close-up detail.

© 1998 Twentieth Century Fox. Image courtesy Hunter/Gratzner Industries.



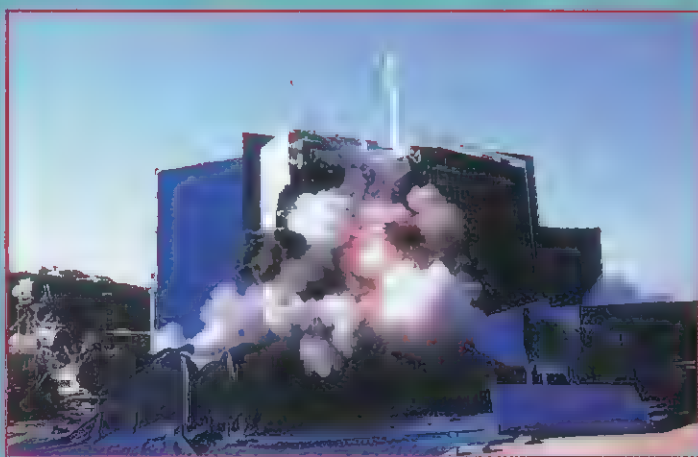
Creating the saucer miniature involved many steps which proceeded from first making an aluminium armature, consisting of eight radial arms attached to a central mounting post. Onto these arms, several circular rings of neon lights, flawlessly custom made by *Nights of Neon*, were installed. Over this would be placed the surface shell, which had to be carefully made from a one quarter pattern of the assembled etched brass, duplicated four times, and glued down onto a final master buck. From this buck a final RTV mold was made to cast up a lightweight, fiberglass backed, epoxy shell. After mounting this finished shell to the illuminated armature, the final details, such as the inner and outer winglets and central acrylic piping unit were added. The latter of which was made to emulate the interior set where *Mulder* slid down the tube in his search for *Scully*. This central acrylic unit was a multi-layered dish that contained radially placed

pipes that were interlaced with wedges of etched brass work, all heavily backlit during the final shoot. One might say it has the look of a 'refinery'.

Another aspect to the design of this 1/200 scale saucer is that its surface creates an illusion as it moves, hovers, and spins. By painting the ship ultra flat black, and using satin black opaquing fluid, layered over the high points, model builder, Mike Possert, was able to give the surface an added quality – moiré patterns. When lit with a hard, raking side light, the surface shimmers as it moves across the field of view. Tiny details are revealed and hidden simultaneously within the diversity of the etched brass work.

For directorial decisions, known only to the production team, the saucer is shown as sparingly as possible. You who are reading this article are amongst the first of the public to witness all the amazing





Top three photos: Real time pyro sequence of demolition on 1/8 scale miniature.

Left: Finished comp of Dallas federal building with rising fireball. Note insertion of infamous Book Depository, site of Kennedy assassination, at far right.

Opposite top: Down shot on dropping facade.
Opposite: UNOCAL building with green screen and actors. Same with miniature federal building comped in.

All images © 1998 Twentieth Century Fox. Images courtesy Hunter/Gratzner Industries.

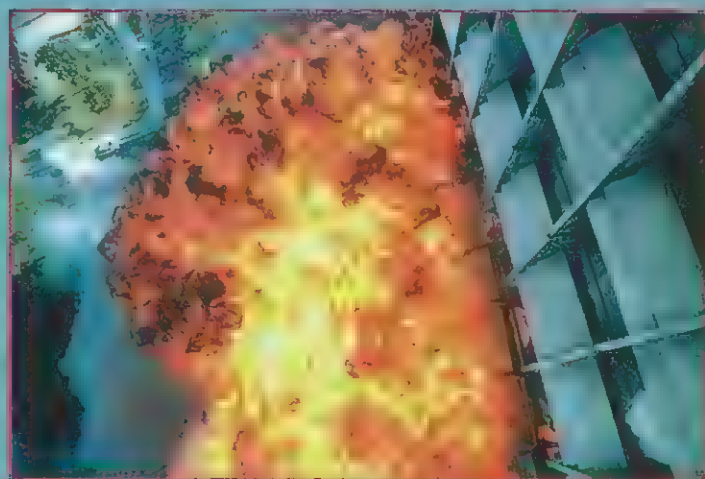
details lavished upon this miniature. It is refreshing to see a miniature that was designed with a unique approach, instead of the typical layering of model kit parts so prevalent in previous miniatures. The devil is in the details, hidden in shadow, hidden in light.

Falling off the Edge

As if building a 1/200 scale, six foot diameter saucer wasn't enough, the production crew requested yet one more effects miniature. For the scenes where *Mulder and Scully* were to be seen falling off the edge of the saucer, a large 1/8 scale miniature would be needed. The miniature, which represents the outer most edge of the saucer, would serve as the moving background plate for the actors to be comped onto. Measuring in at ten feet top to

bottom and fifteen feet wide, this behemoth of a miniature, made mostly of plywood, sintra, and vacuum-formed plastic, was mounted solid. The camera and foam ice blocks were mounted atop a table, attached to a craning system that would, on cue, run down over the structure, creating the illusion that the set was emerging upward from the ice.

It is debated as to whether or not the miniature was actually used in the final cut of the film. I went to the source and asked John Wash. He confirmed that it was, though only briefly, with a lot of elements added over it. "It got used, most definitely. The shot they ended up using was in showing it from overhead. Just for realism, there was atmosphere and snow added.



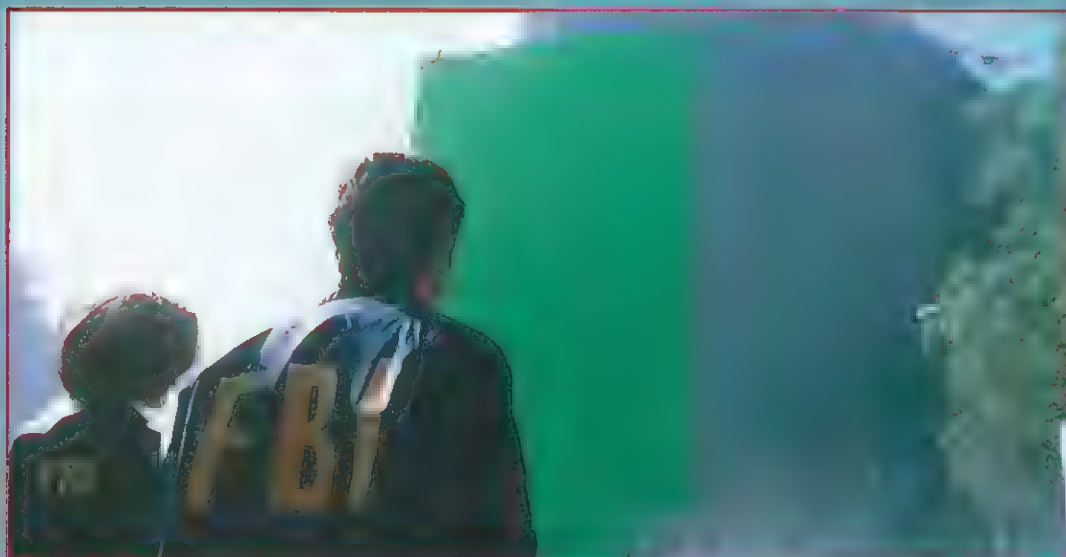
Mulder and Scully were just starting to slide off it," admitted John. The final shot of them falling off is the actors comped onto the 1/200 scale miniature, with a lot of CG elements added, to blend it all together.

Departing Phenomenon

I was glad that through all my interviewing I had the chance to ask John Wash about the final scene involving the saucer. As it leaves the area, it disappears into a cloud bank, which itself was an effect.

"Originally the boards had it going away, glinting in the sun. Magically one moment it's there, and the next it's gone. That idea was thrown out. They didn't want to get too 'over the top'. We opted to try an old technique which Greg McMurry and I had done years ago. It was a dry cloud tank effect, using liquid nitrogen and steam, under temperature controlled conditions, blown around by air in a containment tank," John described.

An additional casting of the 1/200 scale saucer was laid up from the original RTV mold.





open mind, using whatever tool works best for the shot," John proudly stated.

"This project typifies the varied mix of elements that many studios today are being asked to produce. More often than not, the interplay between virtual and physical have been vital to each other's success. Though many studios choose to specialize in either virtual or physical type work, those who can offer up both reap the rewards of larger volumes of high profile work. Blue Sky|VIFX is one of those studios which seems poised to make the long-term commitment to being a key player in an ever changing industry we still love to call, special F/X's.

My thanks to all my colleagues, who graciously agreed to be quoted, and asked to recall this moment from their busy careers.

A very special thank you to, John Wash, Scott Schneider, Alison Yerxa, Amanda Roth and Scot Byrd at Blue Sky|VIFX, for the interviews and images.

My deepest appreciation to Mary Astadourian at *Ten Thirteen Productions* for giving the 'go-ahead' on this article.

My admiration to Chris Carter for creating *The X-Files*.

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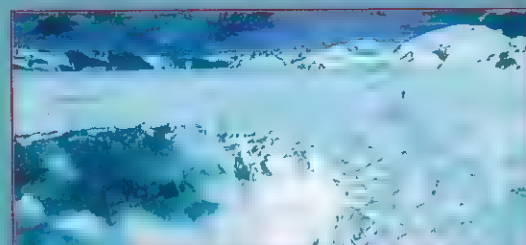
Jim Key, Custom Miniatures,
23624 Magic Mountain Pkwy, #613,
Valencia, CA 91355-2180

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Once cured, it was covered with black velvet and placed into the dry cloud tank. Serving simply as a mask that could be lowered into the tank and pulled out, the 'black buck' was then shot at high speed, approximately 240 frames per second, to capture the individual smoke elements necessary for compositing into the final scene.

"We got just beautiful, tremendous stuff that would take months and months of computer time if you were to try to create it that way. Even with a particle system or volumetric renderer, you'd never get that. As you can see, we still treat visual effects with an



Top: Beauty shot of miniature face-on.
Centre: Crew - left to right, front row: Dave Chamberlain, Logan Payne, Scott Schneider, John Wash, Jeff Cuppernell, Ken Nevarez. Left to right, back row: Patrick Denver, Mike Possert, Kurt Zender, Carlyle Livingston, Alex Watts.
Left: Movie frame of saucer hovering over *Scully* and *Mulder* at lower right.

Above: The collapsing ice field.

© 1998 Twentieth Century Fox. Image courtesy Blue Sky|VIFX.



US Garage Kit Report II : The Quickening

Anthony Taylor

Welcome! After two months of traveling to kit shows around the country I have a stack of new models to review. Usually I try to do one or two reviews in a column, but these have been stacking up and I am going to double up this issue to try and catch up! Also, by the nature of garage kits, they are usually only available for a limited time and if I wait much longer some of these might be sold out. This issue all the kits are original designs, so grab the glue, putty and paint and let's get started!

The Jimmy Legs

Manufactured by: Bowen Designs
P.O. Box 220223,
Milwaukie, Or 97269.
(503) 786-0542.
<http://www.teleport.com/~bowen8r>
Scale: Approximately 1:16, 10" tall.
Sculpted by: Randy Bowen.
Price: \$90.00 +\$10.00 P&H.
Material: Resin.
7 parts, plus chain.



Ratings (1-10); Packaging: 10
Likeness: N/A
Sculpture Quality: 9
Casting Quality: 10
Pose: 9; Detail: 10
Proportions: 9

Wow, this is a great kit. Following the success of his *Decapitator* kit, Randy Bowen's *Jimmy Legs* is a textbook example of how a garage kit should be done. The kit is flawlessly cast in odorless white resin, and needs no cleanup whatsoever. All joints contain male and female fit keys and are situated so that I never even had to use any putty during assembly. *Jimmy* is a bit heavy so I did pin him to the base, but otherwise I was able to simply glue his head and hands on and get busy painting. Bowen's full color box art and booklet on the fictional "history" of the *Jimmy Legs* make for a highly original and desirable overall package. This sculpture is also available as a pre-painted statue, but save a few dollars,

have all the fun yourself and buy the kit. This would be a great model for a first timer, and priced at \$90.00 The *Jimmy Legs* is a bargain.

WAR

Manufactured by: Bowen Designs
P.O. Box 220223,
Milwaukie, Or 97269.
(503) 786-0542.
<http://www.teleport.com/~bowen8r>
Scale: 1:4, 9" tall.
Sculpted by: Randy Bowen.
Price: \$35.00 +\$6.00 P&H.
Material: Resin and White Metal.
3 parts, plus chain.



Ratings (1-10); Packaging: 10
Likeness: N/A
Sculpture Quality: 10
Casting Quality: 10
Pose: 9; Detail: 10
Proportions: 10

I feel like I could almost just write "See Above". The *WAR* bust is a beautiful sculpt and there is basically no assembly involved in this kit. The short sword is the only piece that requires glue, as the gun hangs from a chain. Again the casting requires no cleaning or filling, and the real fun of this bust is in the painting. *WAR* is an original design by Randy Bowen, and is also available as a pre-painted statue. Bowen has been concentrating more on pre-paints over the last several years, but he was

one of the first sculpting stars of the garage kit hobby. It's good to see him return to his roots by offering new pieces as kits, and I encourage you to support his efforts so that he will continue doing so. As with the *Jimmy Legs*, this would make a great piece for someone just getting into resin kits and the price is definitely reasonable.

Kit Builder's Dream

Manufactured by: Blackstar Models
26 Ave B,
Mechanicville, NY 12118.
518-899-3012.
Scale: 1:6.
Sculpted by: Joe Laudati.
Price: \$135.00 +\$7.00 P&H.
Material: Resin and Brass Tubing.
23 parts.



Ratings (1-10); Packaging: 7
Likeness: N/A
Sculpture Quality: 8
Casting Quality: 8
Pose: 9; Detail: 10
Proportions: 9

Blackstar Models are relatively new to the figure kit game, but their first model is a real looker. *The Kitbuilder's Dream* is a kit of the girlfriend that all of us resin-heads wish we had, and *Blackstar's* Dave Meyer has done a great job getting her out of our dreams and into our hands. The kit is cast in a tan resin and cleans up fairly easily. There were no air bubbles in my kit, and the mold lines required little sanding. All seams were placed at natural joints, i.e. the legs joined beneath the seam of her shorts, and the fit is perfect thanks to male and female fit keys. I pinned all the joints to insure her stability and then used just a bit of putty on her shoulder seams. I especially liked the "Ray Harryhausen-esque" kits that she has in progress on her work table and the unassembled kits in boxes at her feet. Joe Laudati's sculpture is a great vision of a wholesome honey that would make most kit builders want to stay home nights.

Ballistic Rose

Manufactured by: G-Zero
P.O. box 171,
Los Alamitos, CA 90720-0171.
562-493-2455.
Scale: 1:6.
Sculpted by: James Hakola.
Price: \$119.95 +\$7.00 P&H.
Material: Resin.
33 parts.



Ratings (1-10); Packaging: 8
Likeness: N/A
Sculpture Quality: 10
Casting Quality: 9
Pose: 9; Detail: 10
Proportions: 10

James Hakola's *Ballistic Rose* is one of the finest sculptures I have seen in my many years of kit collecting and building. James was formerly an artist in residence at *Avatar Creations*, and this kit was to have been released by that company before it folded. Thankfully, Jim salvaged her and released this model himself under his new *G-Zero* banner. Wrought with fine detail, *Rose* is a joy to assemble, although there is quite a bit of assembly to be done. The kit is cast in white odorless resin, and there were no pinholes to fill and only a few mold lines to sand. The only real task was removing the sprues and sanding those areas smooth. The parts fit easily, again due to fit keys which are molded into them. I did do a little grinding and use a bit of putty on her right shoulder and arm assembly, but this was minimal. The amount of detail and decorative elements on *Ballistic Rose* really impressed me, and I recommend this kit highly. An original design that looks fabulous when finished.

That's all for this time. Join me next time for more kit news and reviews!

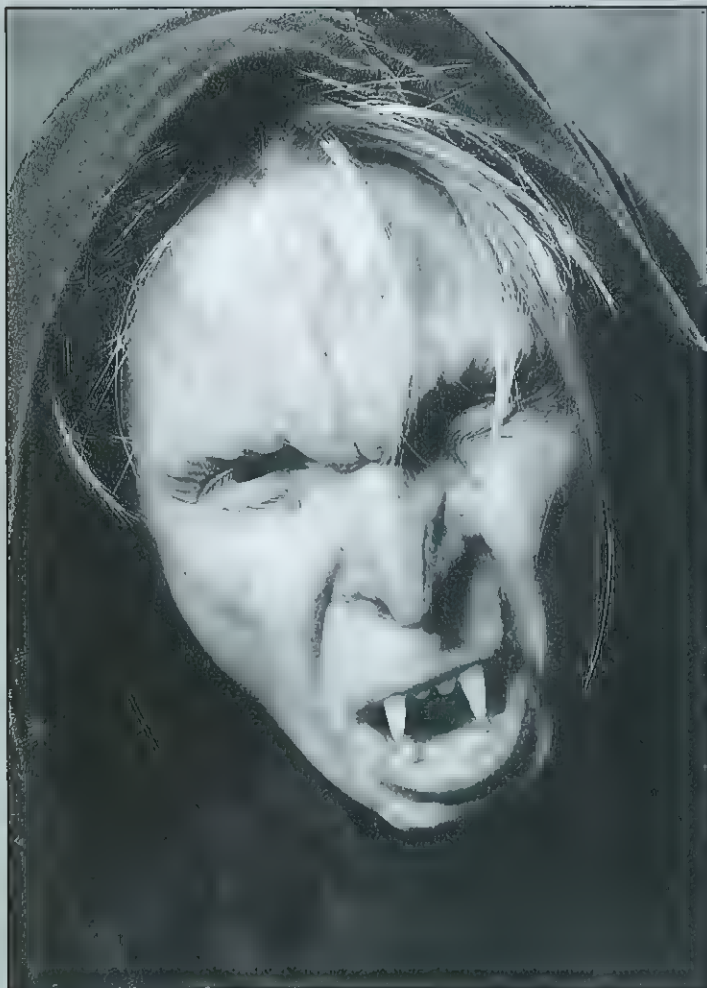
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e-mail: ataylor@mindspring.com

Vampire Hag: A gelatine makeup

Karl Derrick of *Arcane Effects*



What follows is an account of how my team created a *Vampire Hag* makeup in gelatine. The members of the crew who created this beauty with me are: Simon Rose, Gill Griffith and Anthony Parker. The long suffering Deborah Hyde is under all that jelly. The photographs were all taken by the wonderfully patient Ian Taylor.

On with the show...

The client approached us at *Arcane Effects* with a view to us creating a character specifically to be still-photographed. This is rather unusual, as most special make-up projects end up on film or stage.

A problem we have encountered in the past is that, unless gelatine foam or silicone gel appliances are used, thicker appliances tend to absorb the actor's facial movement and limit the performance. Since the *Vampire Hag* was only going to be seen with one or two

expressions, the bulk of the characterisation could be sculpted-in.

I started with a full face and neck lifecast of the model. I like to use a firm body alginate and take the impression in two stages: A very thin alginate layer bonded to a thicker, second layer to give strength. This is then backed up with plaster bandage in the traditional manner. Once I had a good plaster impression I made a silicone rubber jacket mould of the plaster lifecast. I needed to mould the lifecast because the make up would be in several

overlapping pieces and I needed a sectional cast of each facial area to serve as the positive half of the appliance mould.

The make up was in three pieces: The forehead, the nose and the upper lip.

I sculpted the entire makeup on a complete copy of the lifecast so as to keep the big picture in mind. Once I had blocked out the general shape and feel of the face I cut the clay (*Chavant Plastilene*) at the places I wanted the joins and lifted the pieces off the master. They were then laid onto their respective sectional casts and detailed and the blending edges sculpted. The resultant small sculptures were then edged-up and moulded.

Everyone who works with gelatine has their own favourite recipes and formulas. I am no exception. I opted for a quite firm formulation because, as I said, the pieces wouldn't need to move hardly at all. I found out some time ago that really soft formulas are not the answer to good pieces. The softer the piece, the more likely you are to leave the delicate blending edge in the mould. This results in appliances that have door-step edges. Impossible to lose.

Even a formulation this firm heats up on the skin and becomes really flexible in about half an hour.

OK. Once the pieces had all been cast (I made 2 sets, just in case!) we could set up the shoot...

I guessed that the make up would take around two hours to apply and colour so we arrived ahead of everyone else and got weaving.

As I was busy organising everything else I asked Simon and Anthony to apply and colour the pieces. *Photo 1* shows Simon applying the flesh coloured gelatine nose piece. The pieces are glued onto the skin and then the fine edges are dissolved with warm water or witchhazel. The result is an appliance that blends seamlessly (hopefully) with the skin. The skin around the appliances was layered with old-age-stipple to create a more wrinkled, gnarled appearance.

Photo 2 has Simon and Anthony blending away the edges after the forehead piece was stuck down.

Photo 3 shows how the appliances are coloured. We used a mixture of *Rubber Mask Grease Paint* and alcohol to achieve the mottling effect on the gelatine and skin. The final result is seen in *Photo 4*.

The colouring looks a bit over the top in daylight but will wash out to a natural (!) look under the studio lighting. The colouring must continue over the edges of the appliances, up into the hairline and down onto the neck, otherwise there's an obvious finishing line to the make up.

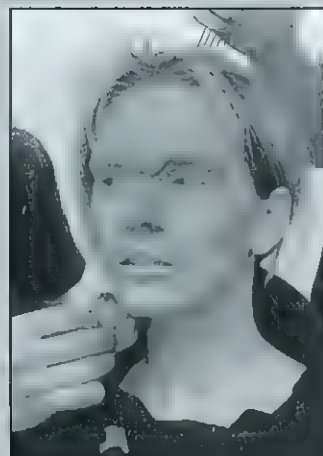
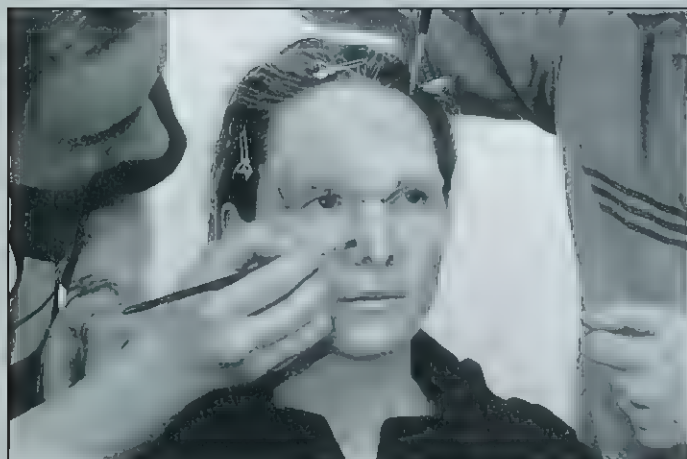
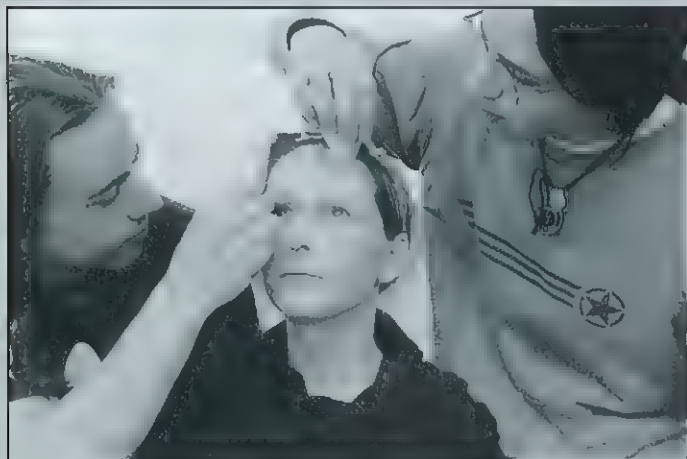
Photo 5 shows hair expert Gill Griffith adding the final touches to Deborah's barnet. It's really important to recruit the right people for the job and Gill has over 14 years experience encompassing hairdressing, wig and hairpiece making, hair-insertion and display work.

If you look back at *Photo 1* you can just see the dental prostheses by the mirror to the left of the picture. Dentition is an interesting field. At *Arcane Effects* we specialise in custom teeth and fangs and I believe we are the only effects-house in the UK providing soft-lined dental prostheses. This means the teeth can be worn all day with none of the discomfort associated with normal hard acrylic lined sets. An added bonus is that, should a performer fall while wearing a set of our choppers, his or her own teeth are cushioned by the soft liner and are therefore much better protected.

The shoot went well, thanks to Ian Taylor's photographic skills and the results can be seen at our website. The address is: www.warkane-effects.demon.co.uk

Gelatine is very lifelike when applied and coloured properly and is one of the few materials associated with special effects make-up that is both affordable and easy to use. I hope you will have a go at something like this – the effort really pays off.

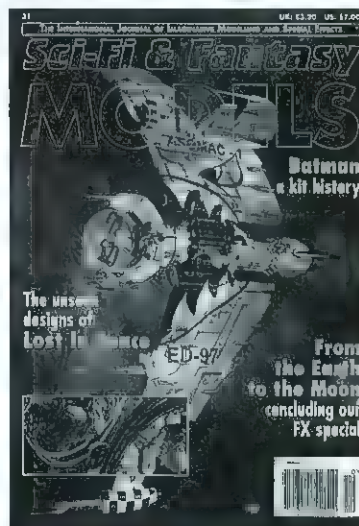
K. D.



Top to bottom: Photos 1-6

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Scratchbuilding a *Shadows* ship

Glenn Ludgate

Whilst building an organic spacecraft variant on the theme of those seen in *Babylon 5* recently a thought hit me – why not scratchbuild the ultimate organic ship – something from the sinister *Shadows* fleet? I know these ships were never constructed outside of a computer, but I decided it was time to put that right. What follows is a record of the methods of construction I used to create my 4' (tentacle end to tentacle end) replica...

I first had both sides of the *Skybox B5* collector card "Coming Of Shadows" – which shows two of the ships in space – photocopied and enlarged to A4 size in colour (the back view depicts the upper plan). This gave me an indication of the shape. I then watched and freeze-framed every *Shadows* "incident" from the series. Many freeze frames later I had a clear picture in my head and sat down to draw up my plans. I came to the conclusion that every *Shadows* ship is an individual – no two are exactly alike and each is symmetrical.

The ship is a complicated shape, with upper and lower "bodies" and various "tentacles". The best way I could think of to construct it was by first sculpting master parts in *plasticine*, then making fibreglass shells from these and joining the various resulting pieces together. I therefore transferred my drawn out plans onto pieces of wood, then built up the tentacle and body halves (each structure was made in two pieces) against these flat surfaces, periodically offering up each tentacle to the main body to make sure it would fit correctly and constantly checking with the drawings and photos I had gathered.

Lower body

After transferring the plan of the lower body, taken from the A4 blowup of the card, onto a piece of cardboard, I transferred this to a large piece of wood, drawing one plan onto the wood then flipping the card over to obtain the opposite plan. Checking my drawings, the A4 blowup and my videotapes, I next built up half of the shape in *plasticine*, sculpting "hills and valleys" into the surface and making it as organic looking as possible. When finished, I smoothed the sculpt over with *vasilene*, fibreglassed it and allowed the fibreglass to cure. I then popped off the resulting fibreglass "shell" and washed out the *plasticine*,

lower body in the same way, with the outline identical but reversed, and thus time I sculpted totally different "hills and valleys" into the surface. When seen from the front this second half features a "hill" at the top and a "valley" underneath, giving the upper body a depression to rest against. The ridges below this are the "shoulders" into which the tentacles fit. Once I had sculpted this piece I

fibreglassed it as I had the first. The lower body halves were then glued together and sanded along the join, then the whole lower body was lightly sanded to remove any glass fibre hairs.

Upper body

The upper body was made in the same way – the only difference being in its shape, which is the reverse of the lower body's contours. It also features an extra piece that holds additional tentacles. I inserted a length of tube centrally to align the upper and lower bodies, first drilling out holes in the top and bottom halves of each shell as close to the centre of gravity as possible, at the same time making sure that these

were also drilled in the deepest parts of the ship to conceal them. Into these holes I threaded a length of brass tube of the appropriate diameter, but this would only eventually be fixed into the lower body shell (I'll explain why later).

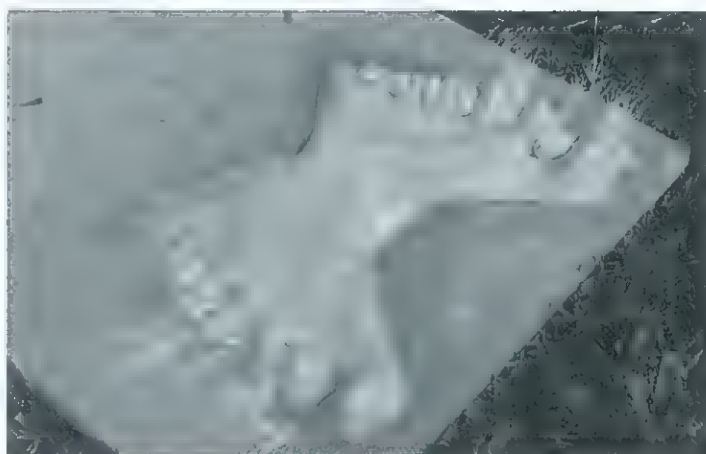
Large Tentacles

As a rule the lower tentacles on *Shadows* ships hang downwards whilst the upper ones arc upwards.

Because this is an organic ship they can change shape, so their positioning and posture are up to you. I began with the rear tentacles, making these

20" long, and tapering them down from 15mm diameter where they connect to the body to 4mm at the tip. I first made a card template then drew around this onto

my piece of wood. *Plasticine* was then used to build up a semi-circular profile. As I was shaping each tentacle master I gouged depressions into its surface. Once left and right master halves had been made I smoothed them down with *vasilene* and fibreglassed them. In order to hold the fibreglass matting in place on top of the *plasticine* whilst it cured I added *plasticine* blobs around the outside edges – if unsupported, the matting dries to a flattened profile rather than a semi-circular one. Once it had cured I popped off the fibreglass, cleaned the inside of the shells, sanded the edges and glued the tentacle halves together. When the bond was firm I carefully sanded away any rough edges and loose fibres. I won't go into the making of each tentacle – suffice it to say that the easiest ones



Left and right: fibreglass parts were cast from *Plasticene* 'masters'. Inset: the completed alien ship.

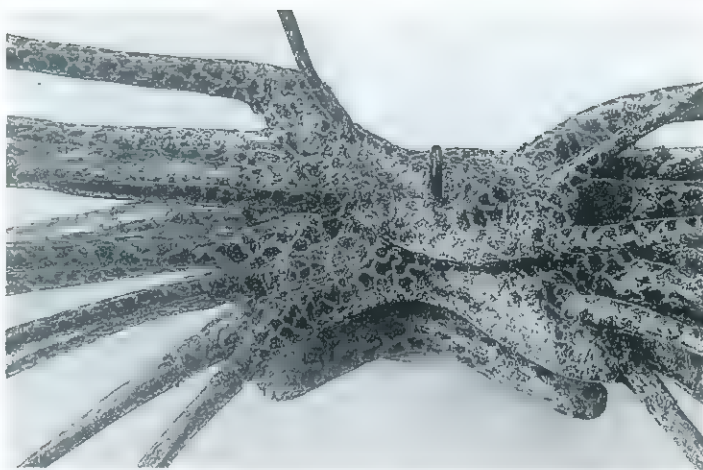
to make were the large versions detailed above, whilst the thin, narrow ones proved to be a pain in the ****.

Pain in the ****

While working on the medium-sized tentacles it became more and more difficult to hold the fibreglass in position over the narrow sculpted shapes, even with the aid of restraining blobs of *plasticine*. I therefore asked around and eventually bought a metre of 125g glass fibre. This is so thin you can read your newspaper through it. Once it had been applied and had cured over my *plasticine* tentacle masters I removed the *plasticine* and coated the inside of each tentacle half with a thin layer of thicker fibreglass before joining the halves together.

Mounting and sleeves

Making sure the tentacles fit snugly to the body I glued them in place. I then added a "collar" of fibreglass above and below each join to form a sleeve. I allowed these to cure then sanded



The intricate 'Shadows paint job'.

them smooth, working my way along from the back to the front. At this point I realised that fixing the upper body in place earlier had been a mistake as I couldn't now add all the sleeves and would not be able to paint between the bodies at the finishing stage. With a bit of pulling, the upper body came loose and was

removed, together with the brass tube inside it.

Painting

With upper and lower bodies finished and all the tentacles added I lightly sanded each join so that I obtained a smooth finish and then primed the two units. I then sprayed them with a couple of

coats of semi-gloss black. Next I applied that all important top coat. If you watch the series, you will notice that the ships feature a complicated surface pattern – a sort of irregular brickwork design – all over them. I painted this on by hand in a green-grey using a good quality pointed brush held upright so as to give the patterning slightly feathered edges. The whole ship took me a week to paint in this way.

Glitter

To simulate the shimmering effect seen in the series I next painted the ship with glitter mixed with a glue solution. This takes some time to dry, so I completed one surface at a time, leaving a period of twenty four hours between paintings. After the whole ship had been covered I gloss varnished every surface and finally, using an eye bolt, bolted the upper and lower bodies together. The completed ship hangs from my ceiling. Because it is made from fibreglass – even with its 4' wingspan – it weighs less than 2lbs!

Moviewatch continued from page 7...

There had been many rumors about Cameron being unhappy with *DD* over the past couple of years but no solid word as to why. Perhaps this has something to do with his decision. I know that Winston seems to have his hands full with his own shop and it would make sense that he would want to concentrate on that more completely especially with work being as slow as it seems to be right now.

Starship Troopers 2?

It seems that, along with all the other rumors I sift through, one continues to pop up – that there may be a sequel to *Starship Troopers*. Not everybody is going to be happy about that but I really thought the movie was fun and the effects top-notch. In any case, rumors about a sequel started even before the film was complete. Verhoeven has stated on more than one occasion that this was the only film he wanted to do a sequel to. All the principals have fielded the question in interviews and have all stated that they would be interested in doing one should it come up. More recently Casper Van Dien (*Johnny Rico*) stated that if there was a sequel Verhoeven would definitely direct because he's the one who holds the rights to the franchise.

Babylon 5: Crusade

It's coming soon to a small screen near you. This isn't really movie news but I think it fits anyway. Especially when you consider that the series will get a 2 hour send-off – *The River Of Souls*. **CRUSADE** picks up where **B5** leaves off. The *Drakh*, a race who were upset about

the loss of both the *Shadows* and their homeworld at the end of the *Shadow War* attack Earth. As they are being beaten back they unleash a virus into the upper atmosphere creating a slow-moving plague infecting all of the inhabitants of Earth. This brings us to our basic series premise: the *Rangers*, led by the crew of the *Excalibur*, have five years to discover a way to cure this plague or every living thing on Earth will die.

Unlike *Babylon 5*, where most action takes place on a station, the crew of *Excalibur* go from world to world looking for remnants of the *First Ones*' civilizations for keys that will help unlock the mystery of the *Drakh* virus.

An entirely new cast is involved though some of the original cast may make guest appearances.

New Line – Lord Of The Rings trilogy for director Peter Jackson.

– Saul Zaentz To Exec. Produce Project Picked Up From Miramax Films –

Here is an edited version of *New Line's* press release: (L.A., Aug 24, '98) – *New Line Cinema* will commit more than \$130 million to produce a live action, special effects-packed trilogy of films based on J.R.R. Tolkien's fantasy novel *The Lord of the Rings*, it was announced today by Robert Shaye, Chairman and Chief Executive Officer of *New Line*, Michael Lynne, President and Chief Operating Officer of *New Line*, Michael De Luca, President and Chief Operating Officer of *New Line Productions*, and Mark Ordesky, President of *Fine Line Features*. Peter Jackson

will co-write, co-produce and direct the franchise, which will be executive produced by Academy Award-winning film legend Saul Zaentz. Jackson's longtime production partner Fran Walsh will co-write and co-produce through the director's *WingNut Films* banner.

New Line picked-up the rights to *Lord of the Rings* and Tolkien's *The Hobbit* from Miramax Films. Miramax co-chairmen Bob and Harvey Weinstein will serve as executive producers of the potential franchise. *New Line's* deal also includes worldwide merchandising rights to consumer products based on the property.

The company may release the trilogy as a Christmas-summer-Christmas event during the 2000-2001 calendar year. The films will be produced consecutively and shot on location in New Zealand. Principal photography will last approximately one year, and it is expected production will begin by mid-1999. *Weta Digital*, Jackson's FX firm based in New Zealand, will be responsible for the elaborate CG visuals demanded of the project.

Jackson has been developing the trilogy for more than two years while working with his groundbreaking FX team to perfect proprietary computer programs that will be used during the complex production and post-production process.

"It has taken 45 years for filmmaking technology to finally catch up with Tolkien's imagination," Jackson said. "We are fortunate here in New Zealand to have both the computer technology and natural

landscapes to bring the unique world of *Middle Earth* to life. It's very exciting to be making *The Lord of the Rings* as a trilogy. Shooting three feature films back-to-back has never been done before, and shows tremendous vision on the part of Bob Shaye and *New Line Cinema*. Not only will we create a unique cinematic event, but we will be treating Tolkien's work with the respect and integrity it deserves."

– The release continues for another 10-20 paragraphs without adding any significant information:

This is exciting news. While the project was with *Miramax* there was never any definite information about it. This led folks to believe they weren't 100% behind it – which turns out to be the case since they sold the project to *New Line*.

There is more news available directly from the mouth (or the fingers) of Peter Jackson. He answered "20 Questions" for Aint It Cool News on the internet (<http://www.aint-it-cool-news.com/lordofftherings.html>). In this article he mentions the plan for the *hobbits* is to use "standard" sized actors reduced through CGI. *Dwarfs* may be little people or reduced full-size actors as per the *hobbits* – they haven't decided yet. *Elves* will be standard actors but the final look has yet to be determined. He also mentioned that, contrary to rumor, Sean Connery will NOT be *Gandalf*. He said Connery is pretty much out of their price range. They plan to use mostly new talent but he is sure the studio will want at least a couple of "names" to sell the project. Go to the website above if you want to see the whole thing.

STATESCENE

Marc J. Frattasio

Prequel designs hit net

The first **Star Wars** prequel is scheduled for release in the USA during February, 1999. More and more information about this film is coming into circulation, including images and descriptions of some of the new spacecraft which will appear. Expect to see the Z-95 Headhunter Fighter, Federation Battleship, Sith Fighter, Pod Racers, and Gungan Submarines. Check out 'The Force.Net' at <http://theforce.net> regularly for the latest information and rumors on the new movies. Hasbro have announced their first **Star**

Wars prequel character figure, available through an Internet mail-away offer by the time you read this. This is something called a 'Stap with Battle Droid'. A Stap is apparently a small antigravity vehicle.

Hasbro's latest **Star Wars** figure releases include *Leia in Hoth outfit*, *Death Star Trooper*, *Death Star Droid with Mouse Droid*, and *Pote Snitkin*.

Galoob will soon release a limited edition *Star Wars Action Fleet X-Wing Fighter*

Painted to resemble *Luke's Dagobah swamp-weed festooned craft* seen in **Empire**.

Ballantine Books have published *The Star Wars Encyclopedia* by Stephen J. Sansweet. This 400 page hardcover contains alphabetical listings of every person, creature, spaceship, planet, technology, piece of hardware, etc., seen or mentioned in the film trilogy, animated TV productions, books, video games, etc. It includes hundreds of photographs and illustrations.

Hallmark have released eight new SF Christmas ornaments for 1998 — six

Star Wars and two **Star Trek** subjects. The **Star Wars** ornaments are an *X-Wing Fighter* (illuminated engines), *Boba Fett*, *Princess Leia* (from the first film), and a set of three tiny *Ewoks*. **Star Trek** offerings are the *First Contact Enterprise E* (illuminated warp engines, impulse engines, deflector shield) and *Captain Janeway* from *Voyager*. Each collectible is authentically detailed and decorated.

Hallmark have also released a fine Christmas ornament replica of the *Apollo 11 Lunar Excursion Module* with descent engine illumination and actual *Apollo 11* astronaut voice effects.

Classy Ambassador kits

Rumor has it Ertl will market two different *Ambassador class* starships from **Star Trek the Next Generation** and recent films. One kit will build into the *Enterprise NCC-1701-C* from **ST:TNG** episode *Yesterday's Enterprise*. The other will include new parts and decals to permit other *Ambassador class* starships such as the *USS Yamaguchi* and *USS Zukov* to be constructed.

Is everyone out there aware that **Star Trek** TV and film modelmaker Rick Sternbach now has his own Internet site? Check it out at <http://home.earthlink.net/~rsterbach>. Among other things, Rick compares the *Revell-Monogram Voyager* kit to the original studio prop on his web site.

Minbari Cruiser?

Rumor has it *Revell-Monogram* will release a **B5 Minbari Warcruiser** during 1999. Additionally, it seems *Revell-Monogram* have given up on their *Selected Subjects Program* of limited edition kit reissues. No SSP kits appear in *Revell-Monogram's* most recent Internet catalog. Let's hope *Glencoe Models* can pry some of the old *Revell* and *Monogram* molds away from *Revell-Monogram* or we may never see these things at reasonable prices again. This writer is aware that *Revell-Monogram* pulled additional space molds out of storage (*Monogram's Willy Ley TV Orbiter* being one) in anticipation of releasing them as SSP kits. However, interest in SSP kits apparently diminished with every release. What a shame.

Kiss kits

KISS, the 1970s rock band famous for their long hair, leather fetish black and silver costumes, high platform shoes, and Kabuki facial makeup, are making some kind of come-back here in the USA. *Polar Lights* are

Aurora lives

According to *Polar Lights*, the model kit subsidiary of *Playing Mantis Toys*, the old *Aurora Seaview* submarine from *Voyage to the Bottom of the Sea* is their most requested kit. Therefore, one might reasonably expect *Seaview* to appear in the *Polar Lights' Aurora* reproduction lineup in the not too distant future.

Kalmbach Publishing/Greenberg Books have published *Greenberg's Guide to Aurora Model Kits* by Thomas Graham. This 128 page large format paperback (140 photographs) presents the history of *Aurora* and its wares and includes information on garage recasts, *Polar Lights' reverse-engineered* releases and *Monogram* reissues of classic *Aurora* kits.

Speaking of *Aurora*, here's probably the final word on the legendary train wreck. Apparently, the freight train transporting *Aurora's* stock of injection molds to *Monogram* was wrecked near Albany, New York, during late 1977. A number of flatcars carrying 'Piggyback' truck trailers

loaded with injection molds left the rails and landed in a field. About 5 molds were damaged beyond repair and a total of 14% or 15% molds were considered 'destroyed' for insurance purposes, with the insurance company refusing to pay for the undamaged half mold. Apparently some figure kit molds were destroyed plus a couple of aircraft kit molds and molds for the *Addams Family Haunted House*. When the remaining undamaged molds finally arrived at *Monogram's* facility in Morton Grove, Illinois, only those which the company's marketing department believed would be used within three to five years were retained. The remaining molds were dismantled to reclaim the beryllium copper in their casting cavities. Thus, most of the so-called *Aurora 'oddball'* molds were simply melted down. Supposedly, the president of *Monogram* purchased them to keep them out of the hands of potential competitors and had little interest in returning them to production.

Classic LIS from Trendmasters

Trendmasters have announced the first products in their up-coming *Lost in Space, the Classic Series* toy collection. They will produce at least four 9 inch collector's dolls based upon original series characters. Each will be fully dressed and come with realistic accessories. *Doctor Smith* will wear his U.S. Air Force Colonel's outfit from the first few episodes. *Major Don West*, *Judy Robinson* and *Will Robinson* will wear their silver suits from the pilot episode, *The Reluctant Stowaway*. *Trendmasters* will release at least two 11 inch monster dolls; the *Cyclops* from *There Were Giants in the*

Earth and *Tybo the Carrot Man* from *The Great Vegetable Rebellion*. *Trendmasters* are also releasing two new versions of the *B-9* robot; a two foot tall radio controlled version and a 7 1/2 inch version. Both feature light and sound effects. Perhaps best of all, *Trendmasters* are releasing a *Jupiter 2* with fully detailed interior, illuminated bridge controls and sequentially blinking propulsion system ring, realistic sound effects, removable *Space Pod*, and working landing gear. The toy will come with three in-scale articulated figures (*Dr. Smith*, *Robot* and *Will Robinson*). These fine collectibles, about as realistic as toys ever get, will be released in the USA in time for Christmas 1998. Thanks, *Trendmasters*!

Cult TV Man

Check out Steve Iverson's *Cult TV CMan Sci-Fi Modeling Page* at <http://www.culttvman.com> — without doubt one of the best SF modeling web sites on the Internet, featuring profiles of fan built replicas and actual studio models, kit super detailing hints, interviews, sources of kits and materials, links to other SF modeling web sites, etc. Don't miss the huge section devoted to *Polar Lights' Jupiter 2* kit with detailing tips, aftermarket detail parts listed for sale, LED propulsion system lighting kits and impressive images of built up *Jupiter 2* kits.

Return to Tomorrowland

Disneyland in California have recently restored *Tomorrowland* to its original mid-1950s appearance complete with *TWA Moonliner*, a hypothetical Earth to Moon passenger rocket originally kitted by *Strombeker* during the '50s and '60s and recently brought back into production by *Glencoe*. The original *Disneyland Moonliner* was demolished during the early '60s.

And finally...

Heard of *The Super Adventure Team*, the new half hour MTV comedy series done with puppets and cheesy FX which harken back to the *Superman* nation days? Check it out!



Plague of the Zombies

A phenomenal piece by Simon Laurens. 13" tall with choice of heads. Complete with base and headstone. Museum quality cold cast porcelain. £74.99 plus £7.00 overnight courier.



Confrontation – now in solid cold cast porcelain – quality unequalled. 23" long x 20" tall £109.99 + £10 overnight courier.



Cat Bride

Simon Laurens and Annette Carter. 15" tall. Unbelievable. Cold cast porcelain. £69.99 plus £7.00 overnight courier.



The Curse of Frankenstein
Over 13" tall. £69.99 + £7.00 overnight courier.

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Fax: 01255 223232
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New Curse of the Werewolf

10" tall – unbeatable quality. 150 only! £54.99 + £7.00 overnight courier.



Metaluna Mutant

Sculpted by Vic Doors. 12" tall on large rocky diorama. £59.99 + £7.00 overnight courier.



Christopher Lee as the Mummy

13" tall with base. Another cold cast porcelain masterpiece by Simon Laurens. £69.99 + £7 overnight courier.



Brinke Stevens 12" tall.
£69.99 + £7.00 overnight courier.



Rasputin the Mad Monk

by Simon Laurens. 13" tall with base & name plaque. A superb cold cast porcelain kit. £69.99 plus £7.00 overnight courier.

Gorgon Diorama Prototype

£74.99 + £8.00 overnight courier.



Curse of the Werewolf
12½" tall. £59.99 + £7.00 overnight courier.



The Reptile Over 12" tall.
£59.99 + £7.00 overnight courier.



Kitten Natividad

Cold cast porcelain 1:6 scale.
£59.99 plus £7.00 overnight courier.

All prices UK mainland only. Rest of Europe add 30% of kit price. USA/Japan/Australasia add 40% of kit price. Two or more kits – please phone for discount postage rates.

We stock the largest range of original garage kits in Europe, promoting sculptors of the highest calibre.
• We stock a huge range of kits (vinyl, resin, porcelain, plastic), figures etc. All new kits in stock as they are released at discount prices!
• Magazines including Kit Builders, Model & Toy Collector, Action Figure News, Amazing Figure Modeller, etc.
• Also huge range of comics and trading cards. If there is something you want 'phone for our discount prices. Further discounts for large orders.

Dealers' orders welcome.
Tailor made orders up to £25,000.

Magic in Space

An exclusive portfolio: Part Two.

Geoff Topping in conversation with the staff of Shepperton Studios' *The Magic Camera Company*.

Last issue Geoff Topping chatted to *Lost In Space* main digital animator Evan Davies. Here, in the conclusion of his coverage of the creation of the complex computer generated opening sequence for the film, he talks to Alan Marques and animators Gary Coulter and Caroline Garrett about their involvement in the production of Magic Camera's vital contribution to the movie. As with the first part of this article, we present more exclusive images from the making of the film, courtesy of The Magic Camera Company...

SF&F: Gary... Evan Davies mentioned *Animatics* (see last issue. Ed) - can you elaborate on this term?

Gary Coulter: When animating something as complicated as the *Space Battle* we have to check everything out, so we create an *Animatic*, which is basically rough models and animation. We then go through a process of having bits approved - models, the animation,

the look of surfaces, geometry, etc. Gradually, as things become approved, it evolves into the basis for the final result.

SF&F: What software did you utilise to create the hardware seen in the opening sequence?

Gary: We built and rendered the *Hyper Gate* in *Lightwave 3D*. The *Sedition Fighter* was built using a combination of three

packages, mainly *3-D Studio Max*. However, as we were learning this particular package at the time, we also used *Rhino*, which is a modelling package which works directly with *Max* and also *Lightwave* for a few bits. The two *Bubble Fighters* varied in paint and detail schemes, but utilised the same basic design. There are two portions to each ship; a wing and an engine make up one section, while the other is the

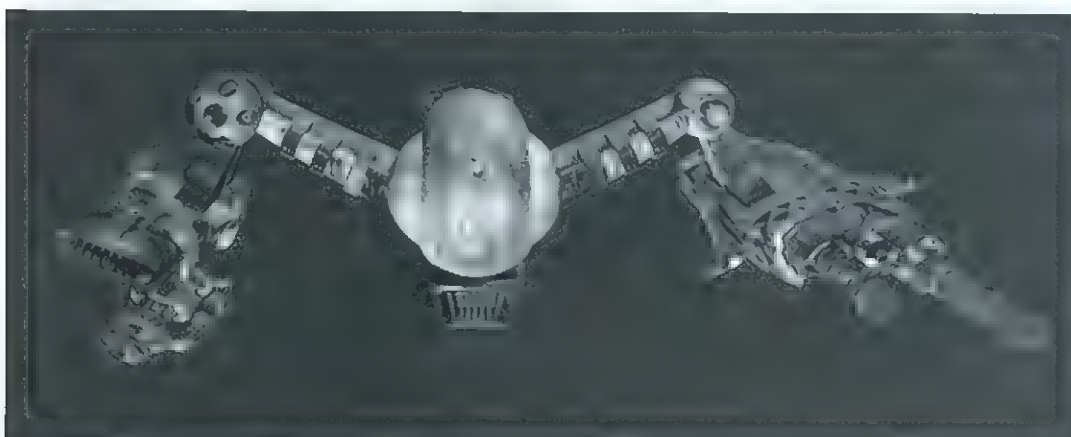
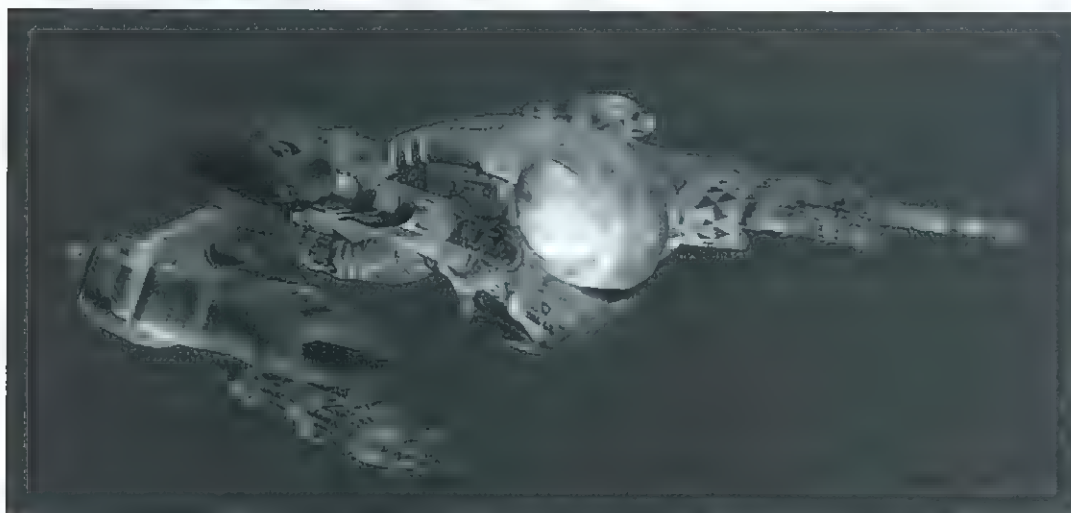
escape pod/cockpit, which basically clamps onto the rear.

The pod was built in *Lightwave* and imported into *Max*, the wing was built in *Max* and then everything was rendered in *Max*. As the scene was going to utilise greenscreen, the cockpit was built as a 1/1 set piece. The scene was shot with motion control so the fighter's 'head up display' and lighting effects could be overlaid onto film. We received footage of the actor in the cockpit and the motion control data, which defined what the camera was doing at that point in time.

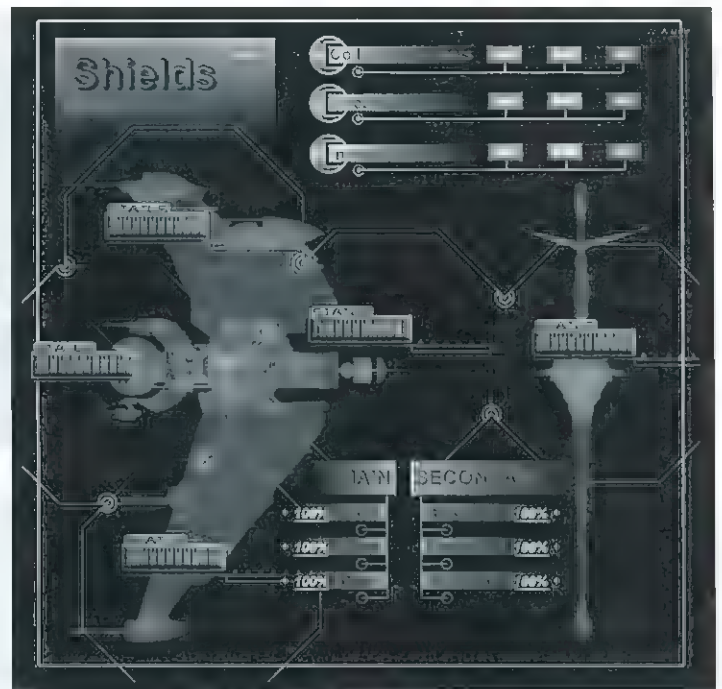
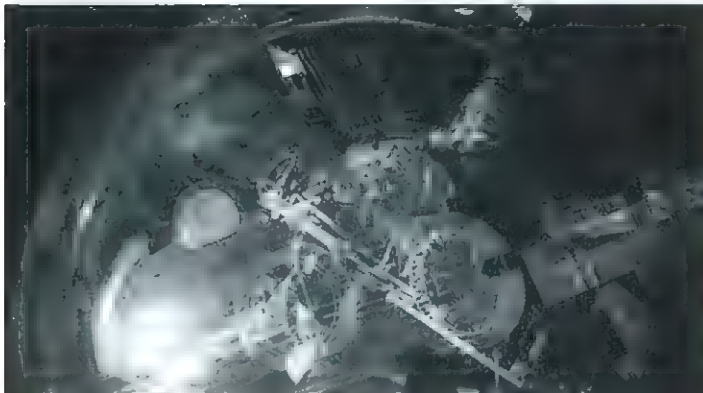
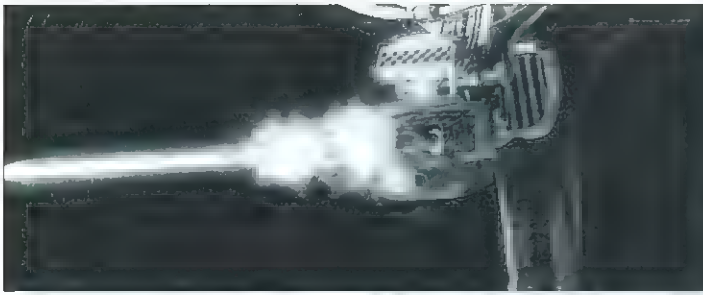
We wrote some software, which took the moves from the camera that filmed the live-action, then we loaded the images as a backdrop into *Max*. We then applied the data of the real camera onto the '*Max* camera', and with a little bit of tweaking - it doesn't always work straight away - we got everything lined up, and everything in the scene moved in sync.

The trick is, and it's a bit of a cheat, that the wing section of the fighter and the back of the escape pod never actually moved in *Max* or on the 1/1 scale set piece. We cheated by moving the camera to give the effect that it's actually banking. A few shots originally required transitions between this and a 3-D version, and there was a transition between the actor in the cockpit and a 'digital puppet'. These would have been quite tricky, as you have to do a morph between the two. One shot involved the *fighter* coming out of an explosion from quite a distance, and then coming right up to the camera. This was intended to be a transition between the digital puppet and the actor, but, due to the speed of the live action element, the shot of the actor was scaled by our 2D department during the compositing process.

The *Hyper Gate* is actually one of the biggest (computer) models that has ever been built. If you look at characters like *Draco* from *Dragonheart*, that is a big model,



Two views of the *Sedition* fighter, digitally rendered by the Magic Camera Company.



Left (top to bottom): *Bubble Fighter* fires its cannon; live action greenscreen *Bubble Fighter* cockpit elements were shot on a gimbaled set and composited digitally with CG elements; *Bubble Fighter* escape pod separates from main ship. Right: Two CG *Bubble Fighter* display screens – unseen in final cut of movie.

but *Industrial Light and Magic* used 'Nurbs modelling' which gives you more detail for a lower data count. But, as we're using *Lightwave*, which is based on polygons, in order to build the *Hyper Gate* we had to have 3.2 million polygons. This made up 180 objects and 900 lights. The *Bubble Fighters* are made up of 374,000 polygons. To give you some idea, the *Titanic* model, which was built for the film by *Digital Domain*, was roughly about 2.2 to 2.3 million polygons. So it gives you an idea of the amount of detail involved. One of the reasons is, if you look at the

opening shot, where the camera is over the city section of the *Gate*, we had to have enough detail so that we could zoom in. We also built a lot of stuff that wasn't utilised, such as scaffolding on the uncompleted *Jump Ring*. There were plans to fly the *fighters* through this, but the powers that be changed the script.

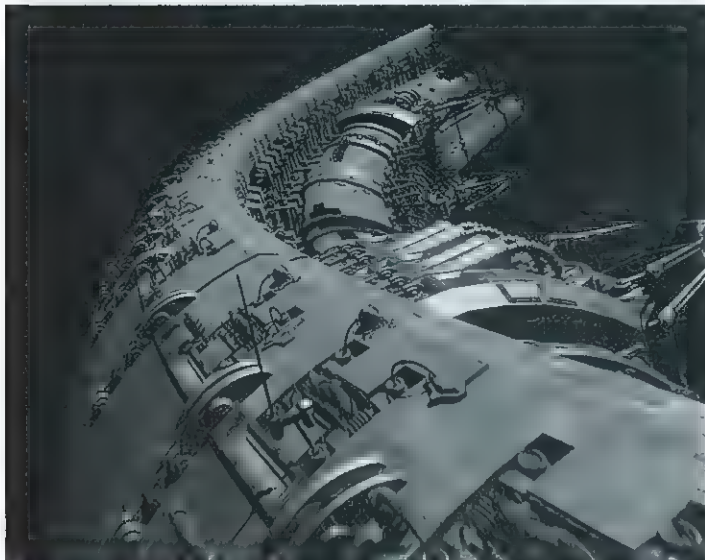
The planet Earth was again built and textured in *Max*, with various filters and effects to give the clouds. The continents and water are from a huge digital map, which is 20,000 x 10,000 pixels, that alone is a 300-megabyte

file. The clouds are actually *talcum powder*, which has been sprinkled on glass; it was then photographed on (Shepperton Studios') *M Stage*, and then turned into a cloud map by the 2-D department, to complete the full map.

SF&F: Caroline, I believe the digital sequences seen on screen in the movie are, at times, very different to what was first planned?

Caroline Garrett: There were a lot of changes, and a few shots were cut out. The producers would come in half way through

us working on them and say they weren't needed. There was also confusion about the way the *Bubble Fighter's Head Up Display* was to be lined up. It was on three axes that it was to spin on, one locked to the motion control camera. We attempted to animate the others by eye, which didn't turn out too well! There is nothing to line up to, and if the actor gets too close, you have to line up the *H.U.D.* out of shot. So, we had to find a way of importing the motion control, which two other technicians had to write the software for. Unlike the computer games industry,



Early and final renderings of *Jump Gate* sections. Below: Digital Head Up Display composited over footage of Matt LeBlanc.

we can't refer to off the shelf software. With regards to motion control, and transferring animations from *Max* to *Lightwave*, and even down to writing software to render the images or to control the rendering, we did a lot of this ourselves, as it is impossible to buy.

SF&F: Is that one of the qualifications needed in to work in computer animation - the ability to write software?



Caroline: No, not really. Gary writes some code because he's from a programming background, and if required we bring in outside freelancers to help us out. We're lucky in that we're a good mix of people from different backgrounds. Evan has been in the industry for five years, I am from an animation background and Ian is from a general graphics background.

SF&F: There aren't many women in this field of Special Effects - was C.G. animation what you always intended to do?

Caroline: Yes, I went straight into it having left the college where I had been studying animation in June of last year and, by September, I was working here.

SF&F: Alan, there's an tremendous amount of work involved in a production of this size. How many people were needed in the CG unit alone for *Lost In Space*?

Alan Marques: There was a lot of work involved in the early stages. We worked on the project for around a year. The first six months we had a very small crew of five people, then in October '97 we ramped up with additional freelance staff. Ultimately, fourteen people were involved in producing the 3D work.

Ian Anderson, Simon Coombs and Gary Coulter were responsible for the *Lightwave* side of things, that is the *Hyper Gate*, *The City* and the background detail ships. Evan Davies was the main animator using *3d Studio Max2*, along with Caroline Garrett and Dave Kirkham. Adrian Banton was a freelancer who did the bulk of the greenscreen import and matching. In the final two months of the project we had additional freelancers doing texture detailing and render nursing.

The 3-D side of *The Magic Camera Company* is backed up by our 2-D compositing department, which on *Lost In Space* comprised of ten people. You can analogise what we do as building a car - we produce the 'bits', and then we dump them on 2-D and they assemble them and produce the final full resolution frames which are then recorded back to film using the *Domino* system.

All images courtesy of The Magic Camera Company Limited © New Line Cinema, Inc.

Seriously though...

Reviewing two resin "fun" figures

Words Bob Gould • photographs Tim Hooper

Nodding Alien

by Terran Trader

I wonder how many of these figures will appear on the parcel shelves of cars, quietly nodding away to the driver of the car behind? And what's next – a "Phew" air freshener in the shape of the *Predator*, or a "mooning" *Pinhead*, raising his skirt to any passing motorist?

Although the idea of the figure is comic, the actual execution of the sculpting is true to the original fearsome beast – and the subsequent casting is very good. The kit comes in three sections; head, body and spring, with the two moulded pieces being clean and free of any major blemishes apart from slight evidence of a seam line across the base. This was easily cleaned up with emery paper and the whole thing given a wash in soapy water, followed by a sprayed coat of black car primer.

At one point here I sat the head on the body *without* the spring and he looked rather good – a tad "deformish" – but good. So you could actually forsake the animation by making a neck from any sculpting medium and turn the figure into a statuette.

If only this had been a warrior from either of the first two *Alien* movies the painting would have been easy. But no. It had to be from *Alien Cubed*, so the required effort is a little more involved. A base coat of acrylic flesh followed by numerous washes of acrylic brown was the order of the day. The application of the brown in a number of thin layers will achieve a far more subtle gradation of colour, leaving you with darkened recesses and lighter relief. If you look at the CGI rendered *Alien* in the *Making of Alien Resurrection* book, you will get a good idea of what I mean.

I picked out the teeth (what an evil little smile this guy's got) in white and the fingernails in brown and then gave the whole thing a coat of *Humbrol Gloss Cote* varnish. The base was left as the sprayed primer coat with the lettering carefully rubbed back to the original resin.



Nodding Alien available from Terran Trader (Tel. in UK 0151 652 9369) and Comet Miniatures.

And for the second offering...

The Bog Monster

by Christian Forward

(available through *Creative Castings*)

As humorous (?) kits go, this one isn't too bad. As a piece of sculpting and casting, it is also very good. As a modelling exercise, it took about three hours! What more can I say?

Christian Forward has produced an excellent body of work – all of it reviewed, at some time or other, in this magazine, and although this is different to his usual subject matter his design skill still shows. Apparently this is the first in a series of harmless, fun pieces – maybe they will rival the superb *Eggberts* – which does lead me to believe that there must be a market out there for them.

As for construction and painting, it is really up to the individual. I chose a white porcelain bowl and cistern, which would enable me to render it cracked and stained – purely to add some detail. The cracks were etched on first, using a grinding bit in my mini drill, and then the whole thing sprayed with white car primer. The staining was achieved with acrylic browns and black, concentrated around the bowl rim, cistern lid and simulated cracks.

The *goblin* himself – after attaching the brush and his arm using superglue and blending the shoulder in with a little filler – was rendered in acrylic green and yellow. The green covered a greater percentage of his back, head and arms, with the yellow dry-brushed to represent the softer underbelly and markings – somewhat similar to that of any reptile. (See Issue 24 for a more detailed description of the process, as applied to the *Lost World T. Rex*.)

The seat and cover were painted straight acrylic brown, with a black wash for staining. The turbulent water was difficult to reproduce convincingly, but I ended up using white as a base, and a wash of brown around the seat and green circling his body as a representation of reflection. That just left the odds and ends, like the mat, handle and brush – I'm sure you can use your own imagination. Finally, I gave the porcelain a coat of *Humbrol silk cote* varnish, just to add a last touch of realism!

These two kits were a lot of fun to do – with no particular stress factor attached to either. Both are well made – you're not getting ripped off with poor workmanship – but are surely aimed at a smaller percentage of the market. I had a thought as to what they could be used for and came to the decision that the *Alien* would make a nice paper-weight and the *Bog Monster* is the ideal shape for a book-end – albeit, small books!



SF&F Pocket Guide

Value for money :

Nodding Alien (£18): Bog Monster (£25):

Ease of assembly and Instructions:

Nodding Alien: Bog Monster:

Suggested for standard assembly:

Nodding Alien: Emery paper.

Bog Monster: Superglue. P38 filler. Emery paper.

Paints:

Nodding Alien: Acrylic spray car primer in matt black. Citadel acrylics in flesh, Bestial brown, black and white. Humbrol gloss cote.

Bog Monster: Acrylic spray car primer in matt white. Citadel acrylics in Bestial Brown, green, yellow, blue, black and white. Humbrol satin cote.

References: Nodding Alien: *The Making of Alien Resurrection* by A. Murdoch and R. Aberly.

20,000 rivets under the sea

John Lane reviews *BCI's Nautilus* kit.

Avarst behind, shiver me timbers and other sayings of a clichéd nautical nature. If that didn't get you in the maritime mood I'm not surprised...

Prepare to get wet everyone – what we have here is an original take on that classic piece of hardware, the *Nautilus*. BCI have come up with their own version of *Nemo's* super sub. With a classic retro future look featuring lots of rivets and a ram bow this design wouldn't look out of place in any retro/steam punk series from **Flash Gordon** to **Giant Robo** or **Sakura Wars**. Or, with a change of propulsion system, it would make a great Victorian style space ship. This is one of the benefits of making up an original design – you can do what you want with it and no one can say it's wrong. The model also lends itself to dioramas – having it berthed at *Nemo's* base or ramming a warship, for example. Before I get too carried away I'd better build the thing...

Cocooned in bubble wrap within the box are 11 resin and 10 white metal parts. There should only have been 10 resin pieces but the base had broken in two. You'll also have to provide a rod of some kind to mount the sub on. A lot of people use clear acrylic rods to mount their models on, and visually these are less obtrusive due to their transparent nature. They do, however, have drawbacks too as they can break and are not as easy to bend as metal rod. The castings for the sub are very nice, although the resin does remain rather sticky, even after a thorough washing. Detail is crisp and none of the parts were warped. Air bubbles were also not a problem, but the main hull and prop rings had a wacking great mould line complete with a lot of flash running around them – not usually a problem, but with surface detail such as the rivets in the way it was difficult to get at. This proved to be a major part of the build as, without a great deal of care having been taken when sanding, huge swathes of rivets would have been wiped out. If you

do lose a few there are a couple of remedies. First, you can buy tiny resin rivets made for armour modellers. These come in all shapes and sizes, but are expensive and you'll have to hunt to find them. Secondly, tiny drops of PVA glue applied through a blunt hypodermic needle make nice rivets.

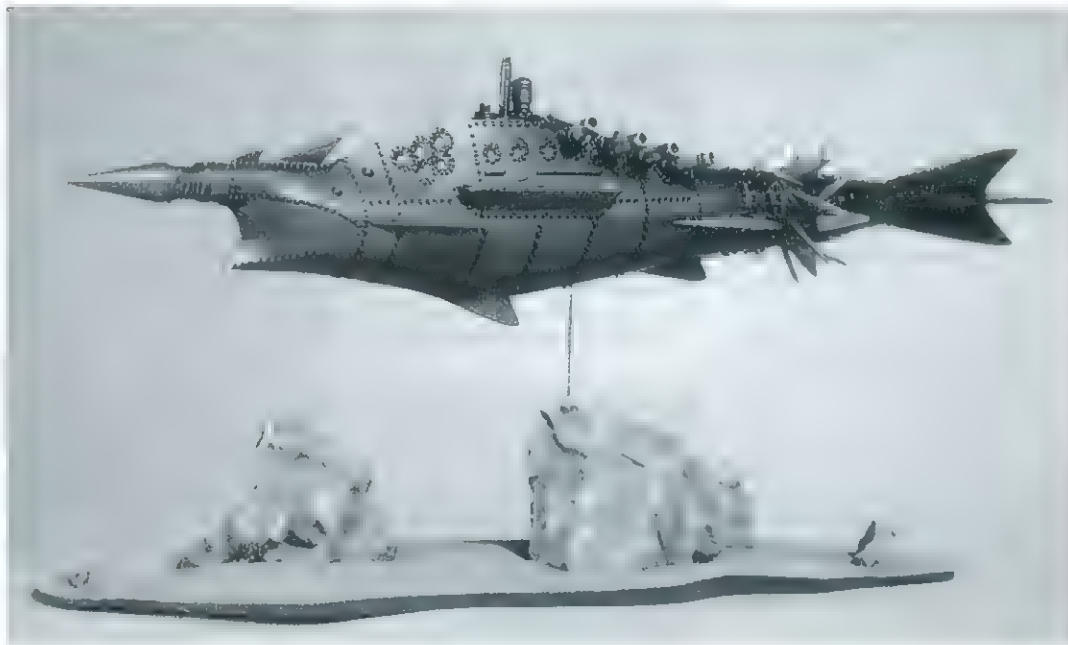
Another problem with the resin is due to the fact that, although it has a nice, smooth, hard surface, as soon as you sand through this the resin beneath is full of tiny air bubbles. After sanding, therefore, any broken surface needs to be resealed. At first I thought a thick coat of primer would do the job, but this proved inadequate. A thin smear of superglue did the trick, although this in turn will need sanding smooth in order to blend it into the surrounding surface. Extreme care is needed when doing this as, if you sand too hard, you'll go through the resin skin surrounding the superglue,

texture. Not helping was the fact that a sliver of resin was missing from the break, leaving a gap. After gluing the two parts together I filled the gap with Milliput and left it to go off. Once it was hard I scribed in some texture with a panel line scribe and a scalpel. Although it looked a bit rough at first, once it had been painted the join pretty much disappeared. Before construction went any further I drilled the holes for the mounting rod.

Construction of the sub was quite straightforward, each part simply being superglued on. No pinning was required, nor was any filler as each part attached at a natural join line. Each of the white metal parts (gun barrels, periscopes) required only a slight sanding to remove mould lines before attaching. The eight gun barrels (I guess they're guns as there's no mention of their function in the instructions) fit onto ball mounts so you can

for this is that colours such as silver, gold, bronze, etc., have a tendency to highlight any little scratch or flaw in the finish. As I had had such a lot of hassle during the clean up of the castings I felt a darker colour scheme might help hide any remaining blemishes.

For the base colour I airbrushed the whole sub in *Tamiya* gun metal. I then ran a 50/50 water *Citadel* black ink wash over the rivet lines and around any surface detail. To blend in the edges of the ink lines on the rivets I moistened a fine brush with *Tamiya* acrylic thinners and ran it over them. Then I wiped off any excess with a finger – well my finger, actually. Don't scrub at the ink or you'll take off the paint underneath. With a little practice this technique can look pretty good and adds a lot of depth to the surface detail. When it came to the detail painting I finished the prop blades in bronze, the guns in a dark steel colour and the portholes in silver. On real

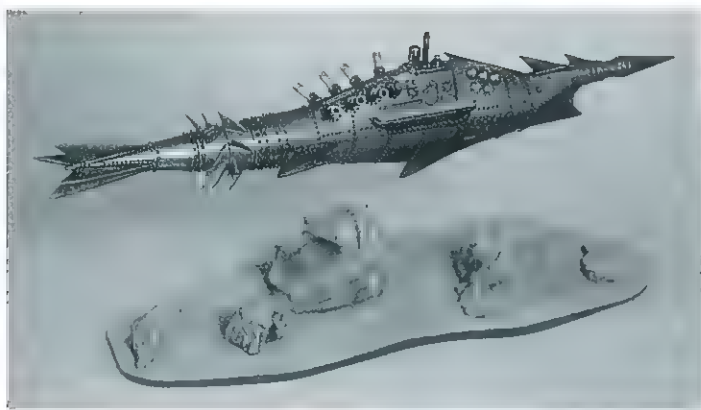


meaning you'll have to start again. This extra work meant that the clean up process took an infuriatingly long time. Fixing the broken base also proved 'trying'. Usually broken resin parts are easy to fix – a spot of superglue, maybe some filler and little sanding and you're ready to go – but this time the sand finish on the base precluded any sanding as it would have removed the

attach them in various positions. You can also glue the diving planes on at any angle, allowing you to display your sub diving or surfacing.

Once built a coat of grey primer finally cured the still slightly sticky resin. The instructions recommended a bronze colour scheme but I decided to go for a more iron clad look. One reason

submarines any view port seen underwater with air behind it looks silver from the outside. Either side of the conning tower are planked walkways and, to add a bit of colour to the model, I decided to paint these in a wood effect. First I mixed up a very light brown with *Tamiya* paints and painted the planks. Next I mixed a slightly darker shade of the main colour and picked out



a few of the planks with it to create a bit of variation. Then, using Citadel brown ink mixed to 1/5 water, I picked out the gaps between the planks. I deliberately didn't do this with any great accuracy as where the ink mix runs

over the top of the planks it gives a very realistic grain pattern.

With the sub finished I turned to the base. First up I painted each rock Humbrol 157 azure blue then drybrushed it with white artist

acrylics. Whilst painting the rocks I noticed they looked familiar and, sure enough, I found they had made a previous appearance on the **Starship Troopers** kit I reviewed in an earlier issue. The sand was painted – you guessed it – sand, with lighter and darker washes of the base colour in order to break it up a little. I drybrushed a little sand onto the more horizontal surfaces of the rocks to simulate sand drifting onto them. The edge of the base was painted dark blue. All that remained to be done was to add the mounting rod. After polishing, I gave it a couple of coats of polyurethane gloss varnish to stop it tarnishing. I had tried Johnson's Clear on brass before but, strangely, it went very cloudy and had to be

removed. The model was now finished.

Despite the fiddly clean-up I enjoyed building and painting this model. A less porous and sticky resin would have been an improvement, but even so as it stands (or floats) the kit is still good value at £35.00. It's good to see a bit of creativity in the form of an original take on a classic design. It certainly makes a change from all those *Disney Nautilus*es, plus I'm a big fan of the riveted look and would welcome more kits like this. Definitely not "sub" standard!

Kit kindly supplied by Comet Miniatures. 

Chapter VII: An unknown species of whale

A review of *Revell Monogram's Nautilus* Submarine injection moulded plastic kit

Words Bob Gould • photographs Tim Hooper

I have never been so disappointed – and then pleasantly surprised – in receiving a kit than I was when this one arrived in the post. I knew it was going to be a "new design" of the *Nautilus* from Jules Verne's *Twenty Thousand Leagues Under The Sea*, but I still had visions of the wonderfully ornate interpretation seen in Richard Fleischer's 1954 movie. An initial look at the box art revealed a fairly unimaginative dark grey cigar – lacking any riveting detail or copper coloured plating; no sawtooth superstructure or clinging octopus.

The first pleasant surprise came when I inspected the parts. The surface of the hull was moulded with riveted plates. Good. The second, and bigger, surprise came when I started to look for reference

material within the words of the original novel, not expecting to find anything of relevance. But, as I read, "...It is an elongated cylinder with conical ends. It is very like a cigar in shape..." and "...the blackish back that supported

me...", the original was looking more and more like this fairly unimaginative, dark grey cigar as I read on.

It is clear that the kit is aimed at the younger end of the market – it's a Snapfit subject that includes three pots of paint and a brush with those unbelievably stiff nylon bristles. Add to that a box you can "cut around the dotted line" and turn into an undersea diorama. I'm not knocking this too much – it serves the purpose (or should that be porpoise) for which it was sold – it's a complete scene in (and on!) a box. I just feel it lacks a little serious interest. I couldn't help picturing a goldfish swimming by, wondering what the blazes it was! But, my modelling urges having been whetted by the novel, off I went...

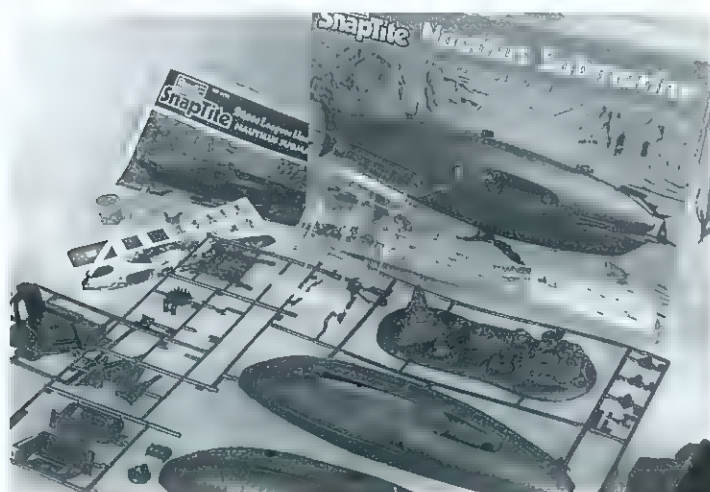
The cut-away insert was first, this seeming to be an amalgamation of the Dining Room, "...I entered a dining-room, decorated and furnished in severe taste... In the centre of the room was a table richly laid out..." and Library "...It was a library. High pieces of furniture, of black violet ebony inlaid with brass, supported upon their wide shelves a great number of books." Because I was going to paint the exterior plating with gunmetal, I thought the interior walls ought to be in slight contrast, so I chose standard acrylic silver but darkened

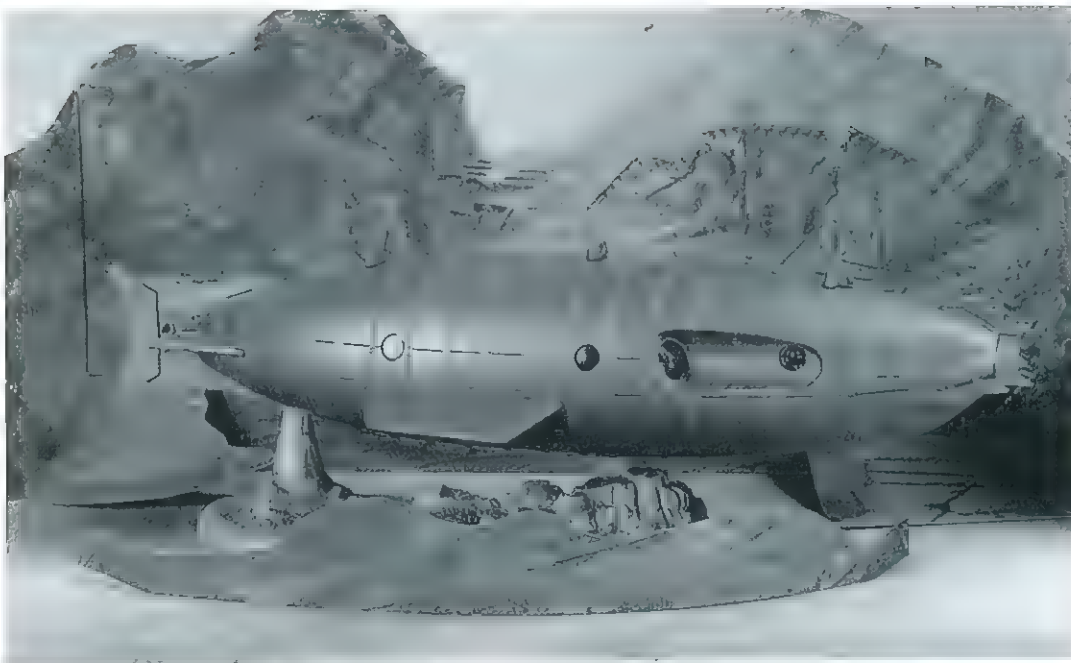
it slightly with a little black. I then ran around any moulded lines with a little Citadel armour wash to add relief. The floor was treated similarly, except I made this one step darker. The book case edges were picked out in brown; handrails, organ, ornaments and pelican atop the stone pedestal in brass; table and chairs in dark brown with deep red upholstery and tablecloth. You have been saved much of the intricate painting because of the addition of a set of "peel and stick" decals – which I duly "peeled and stuck".

The clear plastic portholes were inserted into both halves, followed by the room insert. You really don't need any adhesive here as the spigots and holes are a good interference fit. But, as an added precaution, I heated the end of a needle file and melted the spigots over, like a rivet head. Two more facts came to light at this point; the scale is way out, when compared to the novel, where "...The length of this cylinder, from stem to stern, is exactly 232 feet..." and, on reading the instruction sheet more thoroughly, it mentions "...the Crayola Kids Adventures home video of 20,000 Leagues Under the Sea". Oh well, all my theories of comparison to Verne's original have just been blown out the window!

Before joining the hull halves together, I carefully cut off all the

...aimed at the younger market.





Top: the completed *Nautilus* in its cut-out diorama setting.
Above: a see through panel gives access to *Nemo's* state/dinning room.

mating spigots. This guarantees you a perfect fit – these *Snapfix* kits can be impossible to take apart if the pieces do not match perfectly. With the help of a couple of long elastic bands and a bottle of *Liquid Poly* plastic adhesive the hull became a... cigar shaped cylinder. The "...ordinary rudder fixed on the back of the stern post..." and "...two inclined planes fastened to its sides..." were attached and the resulting gaps filled with an epoxy filler or, if simplicity is preferred, you could use plasticine with a skin of superglue. I left the "...screw... the diameter of which is nineteen feet..." off at this stage and painted it with acrylic copper whilst still on the tree. A little tip for all you readers who, like me, have been using *Humbrol* copper in the

past. Change to *Citadel* acrylic beaten copper – it is a wonderful colour, and gives you an extremely realistic finish. Thanks for the pot, Graham!

The main hull seam was carefully cleaned up, initially by scraping it with the blade at right angles and then polishing off with a small piece of fine wet and dry emery paper. Be very careful not to lose the moulded riveting – it would be very difficult to replace. I then gave the whole craft two good coats of *Humbrol* gunmetal (53) to render it "...blackish..." rather than black. By then first rubbing the surface with a small square of *scotch pad* (you know, the rough side of a washing up sponge) followed by a vigorous polish with a stiff tissue,

you will achieve an excellent metallic finish.

Each individual panel was coated with a *Humbrol* matt black and white spirit wash, simply to break up the regularity of the colour. Once again, polish the surface with a tissue – from bow to stern – to give the impression of water flow staining. I finished off by dry-brushing some *Humbrol* aluminium (56) along all the edges of the sawteeth protuberances, rudders, hydroplanes and, finally, the rivet heads.

The base can be painted with whatever colours you feel would be representative of the ocean floor at twenty thousand leagues – I don't know if mine are correct – I've never dived quite that deep! A mix of *Humbrol* browns (94 and 121) and greys (27 and 64) should do the trick.

OK – I never intended to make up the supplied cardboard diorama, but I felt the kit needed a little "something extra" for the photographs – other than the goldfish, of course!

I can't see this kit being "snapped up" (excuse the pun) by too many serious modellers, unless they collect anything *Nautilus*, particularly as there are a number of other kits concerning this subject on the market at the moment and I feel this one is the less imaginative of the bunch. But, as it is slanted toward the younger age group at a price parents won't faint over, it will definitely sell well. And I have to admit that I did get a lot of enjoyment out of the project – some of that due the fact that I got to read Jules Verne's novel again! There's no doubt that it's a classic.

B. G.

Review kit kindly supplied by
Comet Miniatures.

SF&F Pocket Guide

Revell/Monogram's *Nautilus* Submarine

Value for money (£20)

Ease of assembly and Instructions

Suggested for standard assembly: Plastic adhesive (preferably liquid); elastic bands; filler and emery paper.

Paints: *Citadel* acrylics in brown, red, black, silver, copper and armour wash. *Humbrol* matt in gunmetal, aluminium, browns, greys and black.

References (and quotes): *Twenty Thousand Leagues Under The Sea* by Jules Verne.

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The pressure cooker

A look at the demanding world of the professional modelmaker. Bernard Carr of *Art & Technology* in conversation with Mike Reccia. Part Two.

In this, the second part of our interview with British film/TV, architectural and space modelmaker Bernard Carr, we go behind the scenes for a look at his work on Gerry Anderson's *Terrahawks* and Clearwater Studios' *Thomas the Tank Engine*, and ask Bernard to comment on the demands of his chosen profession...

SF&F: Bernard, you worked on *Terrahawks*, Gerry Anderson's eighties return to a puppet series format, for a while...

Bernard: I remember I was told about *Terrahawks* by *EMA Models* and went along with my portfolio and was offered a job. It started slowly. I wasn't in at the very beginning. When I arrived they were still building workshop benches and the roof leaked. I lent some of my own workshop machines and even a kitchen sink! Soon, however, one was then given various things to do and I ended up, working from Steve Begg's sketch of a tree opened and closed, designing the *Treehawk* launch site tree, building it entirely

and operating it on set. It had eight petals that opened and featured fake hydraulics. How it really worked was that each segment had a tube running down the trunk to a base ring which connected to all eight petals. Rods went up through the tubes so that when you pushed and pulled that ring it opened and closed the petals. It worked well, except that the weight of all the branches on the petals was so great that it was better at opening than closing. They therefore filmed it opening and reversed the film to show it closing. The silo also had two rings of little lights inside it, plus folding access doors and an elevatable ramp, although these details, to my knowledge, were never seen in the

series. It was also my suggestion, because of my knowledge of real rockets, that before the *Treehawk* exited its silo there should be a puff of smoke, just as would happen when a real missile is launched. I also made the *Treehawk* itself. Peter Tilby made the basic pattern of the shape and, from the mouldings, I then added the detail, moulded the cockpit, made the rocket nozzles and fairings and wings, stuff like that.

I made most of the *Terrahawk* and the *Hawkwing* entirely on the same basis and also designed a few bits. I

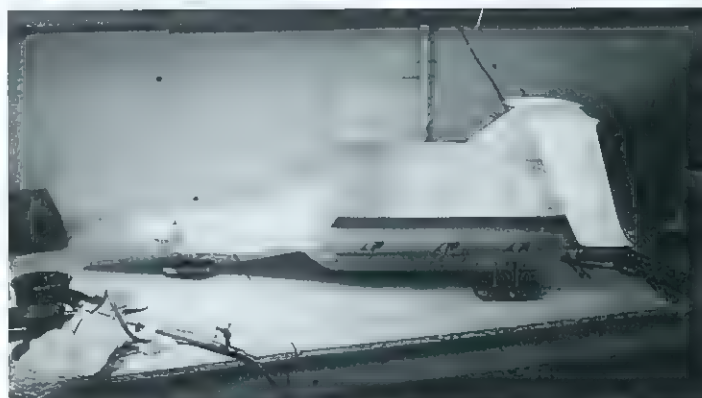


Bernard poses with *Thomas the Tank Engine*.

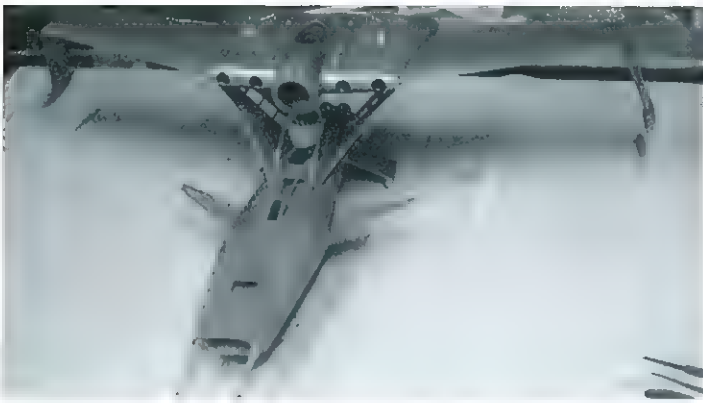
added the *Concorde*-type intakes under the *Hawkwing's* wings, designed the transfer pod mechanism (which takes *Hawkeye* and his pod from their position in the top wing and deposits them behind *Kate Kestral* on the main body. Ed) and also the operating swing-wing mechanism. To operate the pod two sleeves ran down the top of



Above: two views of the *White House*, the *Terrahawks* secret HQ.

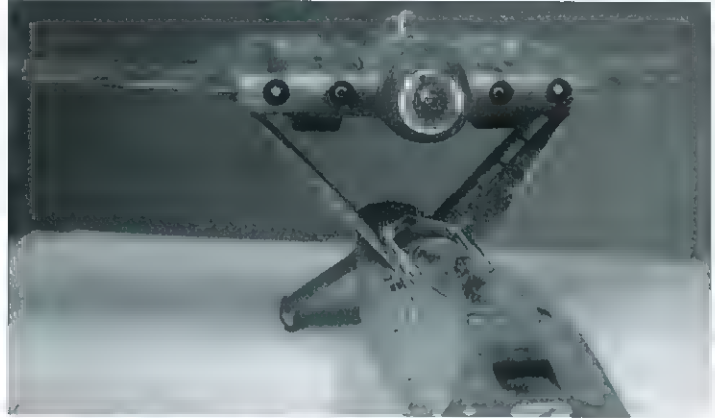
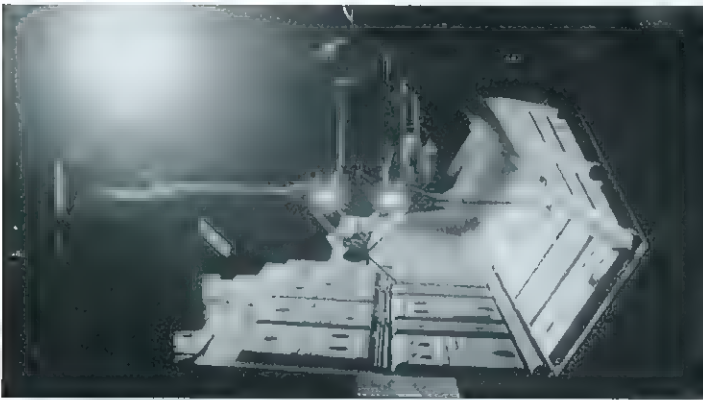
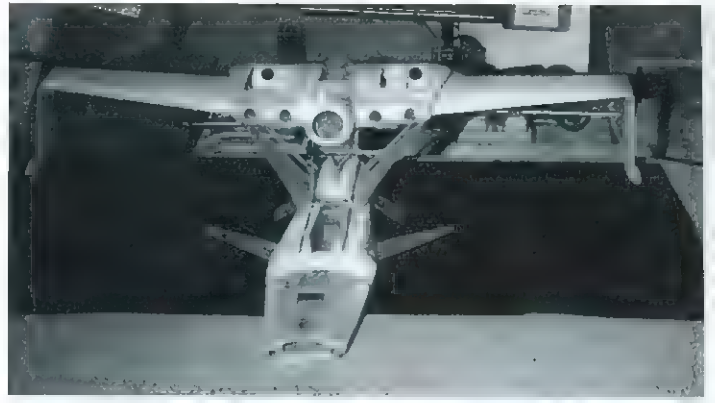


Above: two views of the *Battlehawk* under construction and the completed miniature with *Terrahawk* in position.



Top and top right: two views of the *Hawkwing* under construction.

Right: The completed *Hawkwing* miniature has a simulated laser light to represent its cannon firing.



Above and above left: *Hawkwing* launch sequence during filming.

Left: *Treehawk*'s launch site tree during construction.

Below: *Treehawk* launch site tree interior detailing with some of the exterior foliage added.





Above: Completed *Treehawk* miniature.
Below: Two scale versions of the 'radar' dish.



the fuselage and were connected to a yoke at the front. You removed the nose and then could push and pull to make the pod mechanism go up and down. Underneath the top section it had opening doors where the pod went into the bottom of the wing.

Other models I made included the 'radar' sculpture that sits in the pond. I did two models of that. Ian Scoones had the idea to make it look like something at *Brazilia*, so from that I designed it and built it

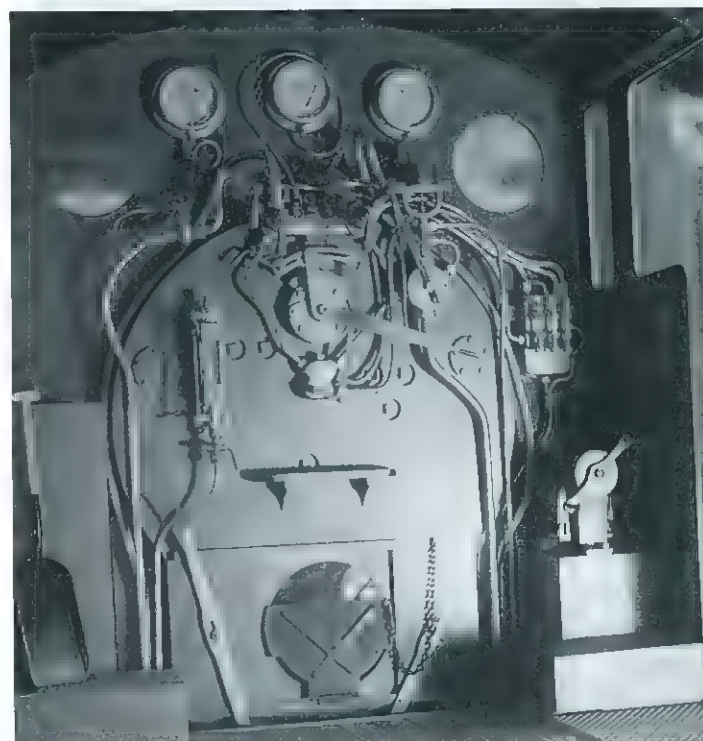
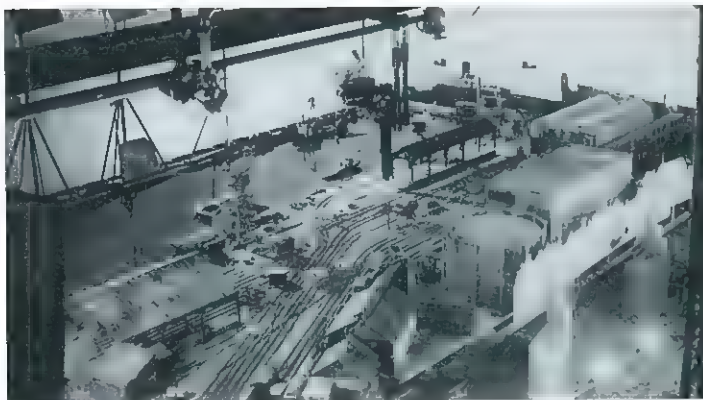
on a perspex armature clad in filler textured and painted to look like bronze. It had a mechanism in it – a tube with a push/pull rod – working right through the base and allowing the operator to rotate the sculpture and then tilt the radar dish. They used the large scale working one for close-ups and the small scale one for the set of the whole house.

I also designed the **Terrahawks** house. The brief was to make it look like something from **Gone With The Wind** – that kind of style. I designed it and drew it up and the boys made it and I made the roof that opens to allow the *Battlehawk* to launch. I started work on the *Battlehawk* and also did a half-size *Hawkwing* and a tiny bit of work on the *Zeroids*' eyes.

SF&F: How long were you part of the **Terrahawks** team?

Bernard: I worked on **Terrahawks** from late September to January of the following year. I remember working very hard over the Christmas holiday to finish various models so that they could be photographed for *Bandai* to make their own sample models for the Tokyo Toy Fair.

From there I went on to *Clearwater Studios* in Battersea, working on TV commercials, and fairly quickly started work on **Thomas the Tank Engine**. Initially I was making very simple, quite large (1:6 scale) extreme-close-up models of the buffers and a full-size, visually functioning whistle (they blew smoke through it and added a sound effect) and it just escalated into me doing a cab interior of *Thomas*, pipe work, a tender, and, piece by piece, the model grew and grew until it was nearly a complete *Thomas* minus the wheels. Someone else made the large face at the front and I moulded it from there. I also made a large scale *Gordon's* cab and tender and a combined *Henry* and *James* cab interior. I then made a large scale coach compartment with two sides – each with different artwork – so they got two coaches for one, effectively. I made the end of the truck, a buffer and a policeman's bicycle... I made the wheel in perspex and drew all the spokes on so that it looked like a proper wheel. I worked on both series of **Thomas**. On the second series I did the gas holders for the *Brendam* harbour set, designed and built the cranes, the salvage barges and the *fat controller's* launch. I also made a large scale *Duck* locomotive with a sad face for when he crashes into the barber's shop. The first series was filmed in Battersea at *Clearwater Studios* and the second at *Shepperton Studios*. On the second



Top: *Brendam* harbour set is readied for filming **Thomas the Tank Engine**. This set featured many of Bernard's miniatures.
Centre: Large 1:6 scale *Thomas* miniature.
Above: Detailing in *Thomas's* cab.

series I made the models in my own workshop and I took them in to the studios.

I subsequently lent my *Thomas the Tank* maritime models to *Clearwater* for their **Tugs** series proposal and I tendered for about thirty models.

SF&F: Did that series make it?

Bernard: *Tugs* made it. I didn't. The first thing on the contract was copyright release and having declined to sign away my copyright on both original **Thomas The Tank Engine** series I was not keen to do so on **Tugs**. I have no problem about signing



1:12 scale flight simulator made for *Rediffusion Simulation*. For added realism the cockpit displays (stores, artificial horizon and map) are backlit transparencies, together with several LEDs and fibre optics.

copyright for work designed by someone else, but am wary of doing so for items *designed* by myself. We danced round in circles for a couple of hours on the subject of copyright release and they ended up saying that modelmakers are two a penny, so I told them to get on with it and left them to it. I didn't have any further involvement with **Tugs**. It was done mainly by *D.B.P. Models*, I think.

Since then I have worked more in general modelmaking, making exhibition and prototype models.

SF&F: Many of our readers are anxious to break into the professional modelmaking industry, obviously with an emphasis on film and TV models. What's your overall view of modelmaking as a career?

Bernard: My work is very interesting and I've maybe been luckier than some. I have done far less film/TV modelmaking than many other of your contributors who work full time in the film industry. I've dipped in and out from time to time. Recently I have had to design and build a robot CCTV to crawl through ventilation ducting, "case-up" a working prototype military laptop computer and am currently building a full size (13 feet long) mockup AVPRO "EXINT" pod, designed to carry someone under a *Harrier Jump Jet's* wing for *Farnborough '98*. Modelmaking, per se, in my experience is an exceedingly hard and demanding activity. Time is the enemy. Clients invariably order models late and allow very little time for the modelmaker to undertake them. I will equally say that many amateur models are made to a far higher standard of finish than many professional models, not because of a lack of skill on the part of the professional, but rather because an amateur can take six months to make a model to the last detail and some of them are very, very good. The professional, on the other hand,

will have to try and achieve the same effect in a fraction of that time.

As an example, the quickest model I've ever done was made while I was at *Cleanwater* – I picked up on an enquiry where the client wanted a satellite dish about three feet in diameter for a *BMW* car commercial. They'd had a twenty-foot full size dish – a satellite earth terminal – made. They were filming this but it couldn't be moved, so they needed a model so that they could film it moving. This enquiry came in at three o'clock on a Friday afternoon. I got involved because of my interest in that area and so was put on to the client's Art Director. I asked him when he needed the model. "Tomorrow," he said. I knew that I had a heat shield mould from a sixth scale *Soyuz* that could be extended and so I told him I thought I might be able to do it.

The job involved first of all getting the materials, then driving down to Brooklands airfield in Weybridge, driving down a quarter mile long hangar in the dark until I could see this full-size satellite dish, climbing up scaffolding and measuring it while my wife held a spotlight on it, then going home and drawing it up and starting work on the model. Come nine o'clock the next morning I was *still* working on the model. They had a film crew on standby from twelve o'clock on the Saturday and, at three o'clock in the afternoon, the art director turned up at my home in a cab and he literally stood behind me while I soldered together the detailed metalwork around the edge until eight o'clock in the evening. We then all departed for the studio. The mini-cab had been waiting *all that time* – you can imagine what the meter had clocked up! – and they started filming at nine o'clock on Saturday night. Despite the fact that the model was less than perfect it was subsequently so well filmed and edited that I couldn't see which was my model and which was the full-sized dish.



SF&F: And that type of pressure, that type of deadlined job is the norm?

Bernard: Maybe I'm unusual or unlucky, but I haven't had a holiday in eighteen years. I haven't been working all of that time, of course, but I have had *so many* all-nighters. Invariably people do not order models in time. One does one best.

In the distant past I have twice been offered *benzedrine* on prescription by a client to keep me going – as it was I managed without it. Clients can be ruthless.

Here's a funny true story. There was once a modelmaker who had had a heart attack from the stress of modelmaking. He was in hospital

recovering and, not knowing that he was a modelmaker, the therapist suggested he take up modelmaking to aid his recovery!

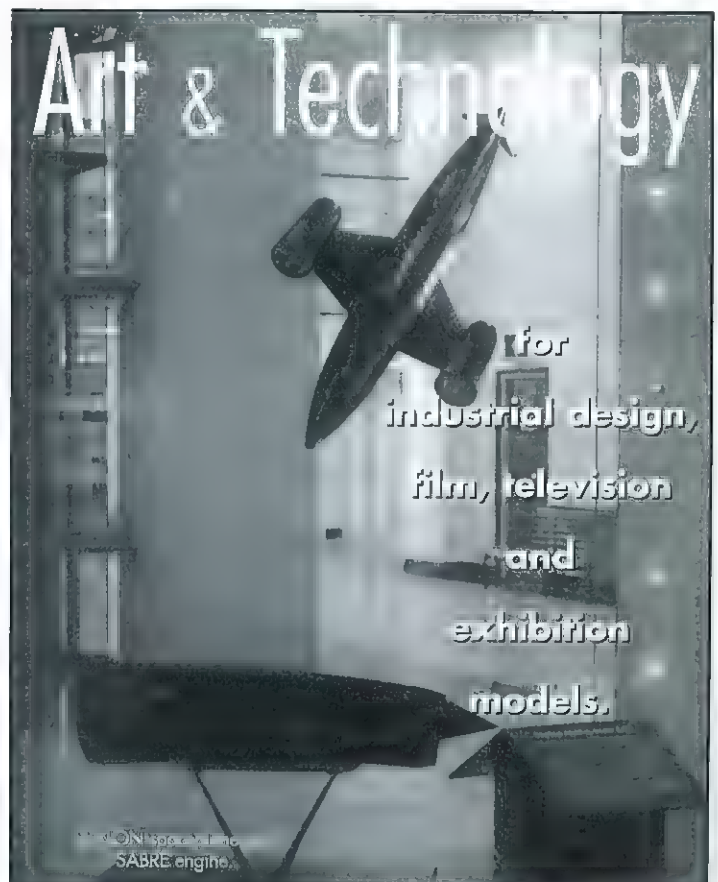
Early this year I produced a 1/36 scale *Skylon* aerospaceplane and a 1/12 scale cutaway model of its *Sabre* engine for a *Technology Futures* exhibit at the *London Science Museum* – ending up doing in excess of 1400 hours in less than 3 months.

On the other hand, it can be extremely interesting work. It can give one access to very interesting and, occasionally, very exciting things – for example, I worked on the model of the nuclear facility at Chatham Dock and I ended up standing under *HMS Valiant* in dry dock holding my model and comparing it with the real thing.

SF&F: Was that top secret work?

Bernard: Yes, I had to alter the propeller and bowplanes for security reasons because my model was too accurate for their liking.

Finally, I would say that my work to date has been very typical of what many professional modelmakers are called on to do, so it will give your readers a good feel for what type of thing they are likely to be working on if they choose professional modelmaking as a career.



Year of Excellence

Ron Thornton and the *Foundation Imaging* team on creating VFX for *Star Trek: Voyager* and *Deep Space Nine*.

S eason four's episodes of *Star Trek Voyager*, together with selected *Deep Space Nine* sixth season segments, were to set new challenges for digital FX house *Foundation Imaging*. The facility was tasked with producing stunning visuals of craft – both Starfleet and alien – plus massive space battles and fleets and menacing CG alien creatures for the series' latest instalments. So successful did they prove at rising to these challenges that their work earned them a nomination for an Emmy award. In the following article, introduced by Ron Thornton, the animators at *Foundation Imaging* speak exclusively to *Sci-Fi & Fantasy Models*, chronicling their FX journey through the lost starship's fourth season adventures, and stopping off at *Deep Space Nine* along the way...



The Year at a Glance

By Ron Thornton (*Foundation Imaging*: President/Visual Effects Supervisor)

This season opened with a bang. I think *Scorpion Part 2* outdid the first part (last season's finale) which was definitely a refreshing change of pace. Usually the second part of these cliffhangers doesn't live up to the first!

Foundation was approached by *Voyager* effects producer Dan Curry near the end of season 3. He asked if we could create a really mean, non anthropomorphic alien for the season finale. On our suggestion effects supervisor Ron Moore and Dan hired the talented Steve Burg to design the creature and its bio-mechanical ship. After the alien was designed it was constructed in 3D by John Teska, an amazingly talented character animator who had just rejoined our team after a brief hiatus. John really liked the idea of *Species 8472* and was excited by its contrast to the usual *Star Trek* 'Man in a Suit' alien.

It certainly turned out to be a kick ass episode and a hell of a finale.

So now what?

Soon after, we received the script for *Scorpion Part 2*. *Trek* FX Supervisor Mitch Suskin was in charge of this show and really wanted to push the envelope (the script by Brannon Braga and Joe Menosky was exceptionally good). Mojo and I worked closely with Mitch, Dan and Producer Peter Lauritsen to insure that this episode was a major event (in fact, we successfully lobbied to reinstate FX shots that had been cut out).

And *Scorpion* was not the end of it! Last season had easily been the most challenging yet for us. Many shows pushed the quality of the effects higher than ever before. We again brought back *species 8472* for *Prey* (featuring a spectacular shot by John Teska and Mojo of it crawling

And, believe it or not, year 5 is shaping up to be even bigger...

So now I'd like to introduce the guys who REALLY do the work on *Voyager*. The way we work at *Foundation* is that each animator is responsible for a shot. Other facilities split up lighting, animation, and composition, but we like our guys to do it all (it gives a far greater sense of satisfaction and allows for more creative control over the individual shots).

Some of these guys are contributing to this article. Please let me acknowledge the efforts and talents of everyone at *Foundation* who contributed to *Voyager* this year. Thank you to: John Teska, Emile Edwin Smith, Rob Bonchune, Koji Kuramura, Dave West, Dave Morton, Brandon MacDougall,



along the hull of the *Voyager*); we had the massive *Year of Hell* two parter (which has just been nominated for a Visual Effects Emmy); many new ships, shapes, planets and, of course, *Spacial Anomaly* of the Week. The volume of work was huge!

Trevor Peirce, PJ Foley, Q, Steve Pugh, Mike Donahue, Sherry Hitch, Mike Stetson, Jeff Scheetz, John Allardice, Dave Adams, Stacie Sharp, Daryl Sebert, Kevin Kipper, my partner Paul Bryant and last (but not least), Mojo.



Top: Ron Thornton and Paul Bryant. Top: *Cardassian Galor Cruiser* 3D rendering. Thanks to Kevin "Q" Quattro for APS VFX" Above: L to R (front): Rob Bonchune, P. J. Foley, Emile Edwin Smith, Brandon MacDougall, Sherry Hitch, John Teska, Mojo. L to R (rear): Claudia Sumner, Dave Morton, John Allardice, Nathan Bishop, Steve Pugh, Trevor Peirce, Kevin "Q" Quattro, Dave West, Koji Kuramura.

"A Month in Hell"

By MOJO

(Foundation Imaging: Voyager CGI Supervisor)

Early last week we were blessed with the news: a small bundle of joy may soon be delivered to us! Everyone at *Foundation* passed around cigars and savored the announcement that separates the men from the boys... we had been nominated for an Emmy Award!

Last season's epic conclusion to *Year of Hell* was a fan favorite and the possibility of earning a Visual Effects Emmy for it has made us all very proud indeed. It started out with an excellent script by Brannon Braga & Joe Menosky, packed with the sort of large scale visuals that one would only expect from a feature film. This script personally confirmed to me that the writers had acknowledged that the use of CGI (Computer Generated Imagery) on *Voyager* had opened up the doors to a level of storytelling that would have been prohibitively expensive otherwise.

We had always hoped that our involvement in the show would provoke more visually assertive material. Well, *Year of Hell Part 2* certainly granted us our wish! Of course, a show this big also had the potential to turn from a blessing to a curse...

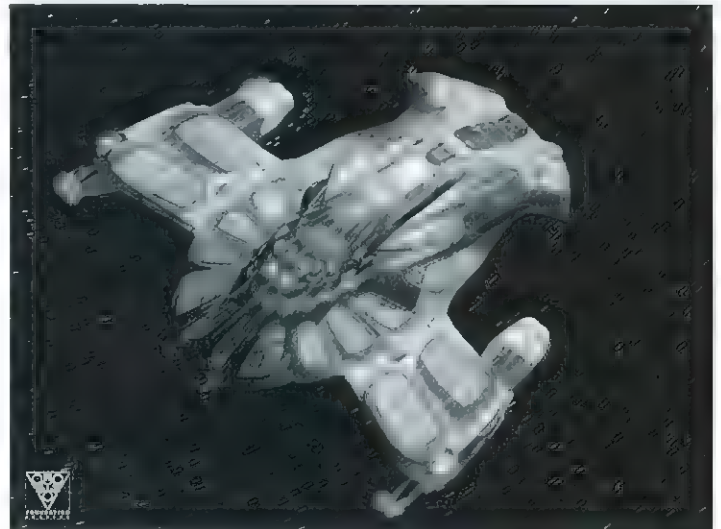
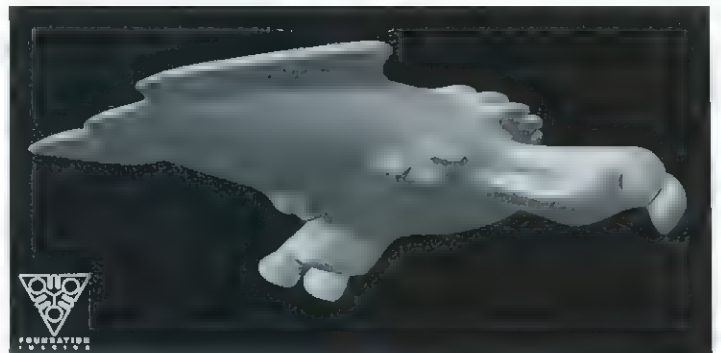
The first part of this show had also been very big – it required the building of several new models, (thanks to Ron Thornton for building the *Kremin* mothership and to Steve Burg for the design) R&D on the *Timeship*'s weapon and resulting shockwave, the slow dilapidation of *Voyager* itself and a bevy of other difficult FX shots! The *Foundation* team was really put to the test and I think everyone performed above and beyond the call of duty; however, one serious problem was lurking while we were pushing to finish part one – part two was closing in on us!

Voyager has a set, regular schedule for the delivery of finished episodes. This timetable is set by live action shooting and when the editors finish their work – it is *not* dictated by how long it will take to complete the visual effects. Visually complex episodes are generally given the same amount of time to finish as lesser ones and it's up to us to find ways to accommodate their schedule. Normally, this isn't a problem, as difficult shows are usually followed by easier ones. However, the

ambitious *Year of Hell – Part One* was followed by the even more taxing *Part Two*! A predicament that even Adam West would have trouble getting out of...

So, while the crew was feverishly working on their shots for *Part One*, I got a head start on *Part Two* by roughing out the complex sequences in advance (such as the dogfight and crashing scenes at the end). While a finished shot with all its fine details will take anywhere from a day to nearly a week to complete (depending on complexity), a simple, no-frills version of a shot can be completed much faster by simply concentrating on the basics: composition, motion and lighting. In a little over a week, I managed to spit out almost twenty (albeit crude) shots. These 3D 'animatics', while far from finished, still captured the overall look and feel of the shots. In some cases (as in *Voyager*'s ramming the *Kremin* mothership) I provided multiple angles of the same shot for the producers to choose from. These were then shown to the *Star Trek* FX Supervisor Mitch Suskin.

Mitch went over the shots and commented on which ones he liked and which ones he felt needed to be re-addressed (this can happen for reasons ranging from a change in the script to simply personal taste).

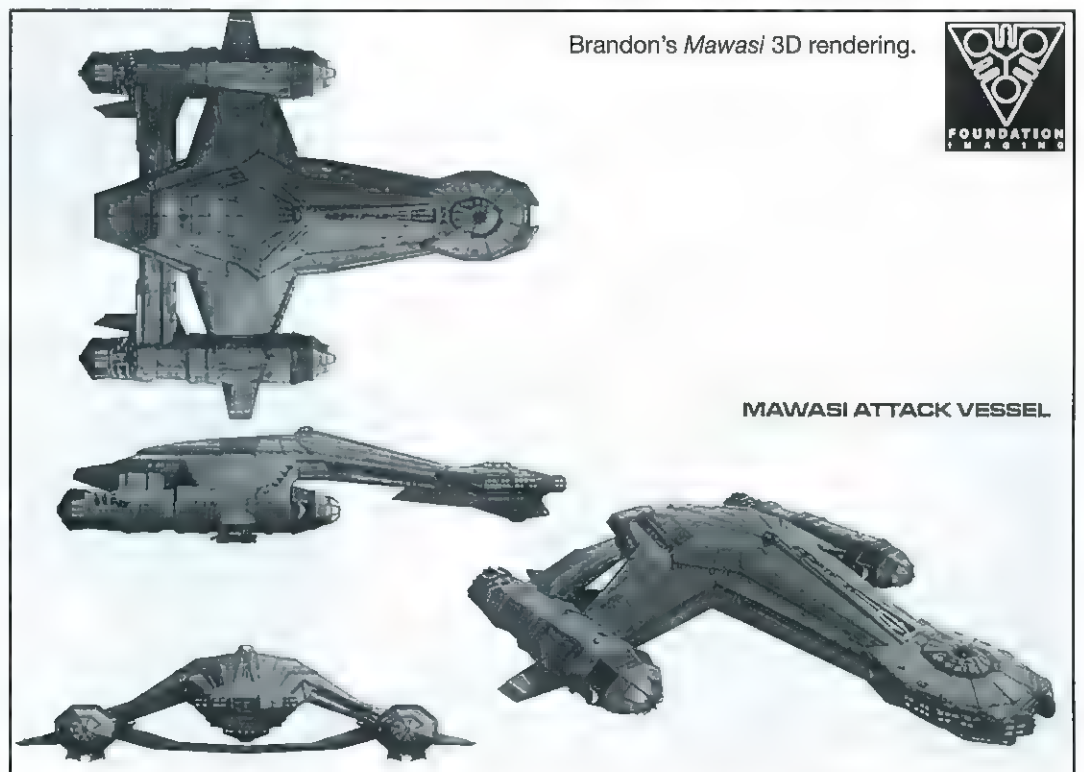


Top: Brandon McDougall's low detail *Nihydron* 3D rendering sent to *Paramount* for concept approval. Above: Brandon's final image of the *Nihydron* 3D rendering.

Because of time constraints, Mitch agreed to show the rough shots to Supervising Producer Peter Lauritson, who is usually brought in after the work is more finalized. Peter generally agreed with Mitch and added his own suggestions – the biggest change

involved the colliding of the *Voyager* and the *Nihydron* vessel.

Originally, the script called for the alien vessel to be blasted by the *Kremin*, fly out of control and rip through a huge section of *Voyager*'s



Brandon's *Mawasi* 3D rendering.



MAWASI ATTACK VESSEL

primary hull. The rough shots I created had the ship speeding towards *Voyager* and smashing through it, much like an oversized bullet. Peter had envisioned this shot more like two huge ships slowly scraping across one another, so I locked myself back in my office and took another stab at it.

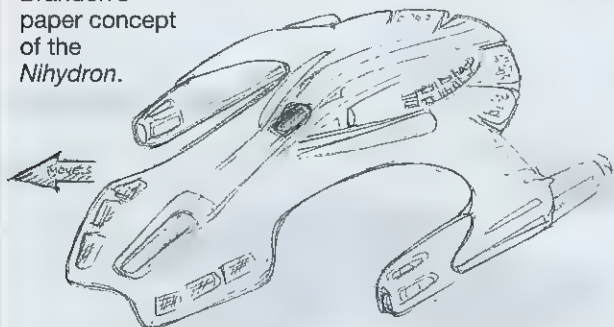
A few days later, Peter was shown a new version of the crash sequence which he was quite happy with. At this point, we had a fistful of pre-approved shots, which could be completed with the safe and happy knowledge that they would not be rejected. This alone saved more than a week of work!

As animators would finish their shots from *Part One*, they would load one of my rough shots for *Part Two* and begin working to whip it into final form (not having to start from scratch also saved precious amounts of time). Animator Emile Smith completed the crash sequence discussed above and added incredible details which transformed it from a simple animatic to a shot which many consider to be the best in the show (look closely and you'll see the observation windows shatter, the hull lights flicker out and even a tiny man hanging on for dear life!).

John Teska's final version of *Voyager* ramming the *Kremin* is another showstopper and I am still amazed at the sheer number of pieces the *Voyager* splinters into! In addition, Koji Kuramura should be applauded for his incredible work in creating the various stages of the damaged *Voyager*, as well as Brandon MacDougall for creating and building the *Nihydron* and *Mawasi* vessels.

All in all, we spent a little over a month doing our part to make *Year of Hell* a standout episode. If only it would take a month to do all my other work for the year!

Brandon's paper concept of the *Nihydron*.



Top right: *The Doctor* faces his patient – *Species 8472*!
Centre: The same scene as it appears in *Lightwave 3d*.
Right: *Chakotay* fights the *Landeel* as crewmembers escape its lair.

Aliens on Board the Voyager

John Teska

(Foundation Imaging: Director of Visual Effects)

While most of the visual effects in *Star Trek: Voyager* take place in the vast blackness of space, a large number of shots take place inside the ship or on the surface of planets. The process of combining visual effects with live-action film is called compositing. The challenges of composite shots are quite different from space shots. Suddenly, the animator has to be concerned with matching existing conditions, such as lenses, lighting, shadows, and actor's eye lines.

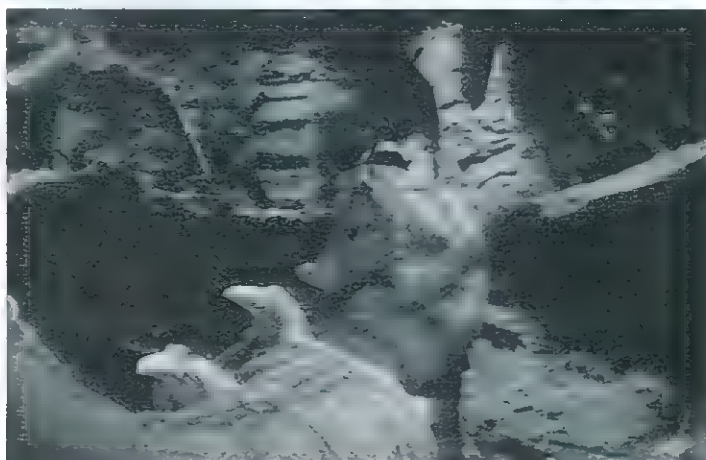
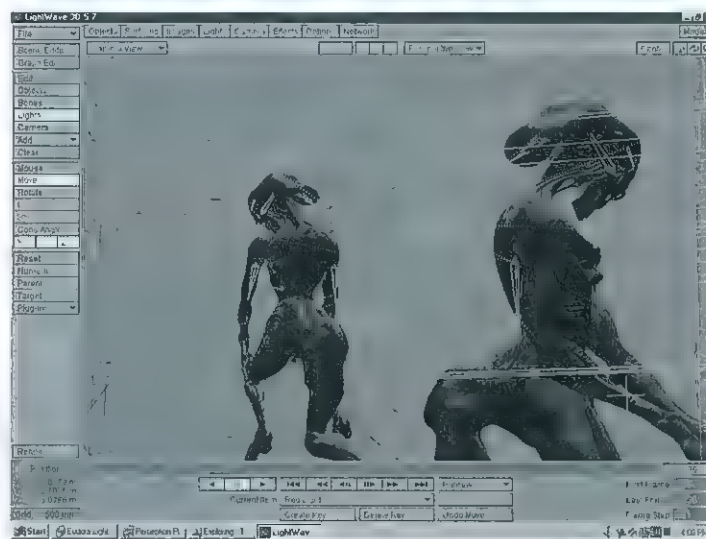
I've had the pleasure of bringing many creatures to life in the *Voyager* universe and having them interact with living, breathing characters. It may be surprising that the same tools that help the *Starship Voyager* cruise through space are used to animate aliens on the show. When the visual effects are broken down to their most primitive elements, it is all pixels and polygons. Working with *Lightwave 3d* is like working with a virtual camera and virtual models. When the *Voyager* flies by the camera, the animator has decided on how the ship and the camera moves. The process has some similarity to traditional motion control, but is infinitely easier and more flexible. The animator is in control of every aspect of the shot, including the timing of the shot and lighting of the models.

When approaching a composite shot, the animator begins with the filmed plate. The length of the shot has already been determined by the edit. The lighting and camera work has already been defined. Even the framing of the shot is set.

All the animator has to do is make something magical happen in the middle of the frame. This may suddenly sound like it's no fun... I mean, what's left? But think about it. The real challenge here is to add something "realistically" to the shot. Suddenly extremely subtle details stand out. The animator has to look very closely at the elements

in the shot. How fuzzy are the shadows? How dark are the shadows? How bright are the highlights? But ultimately, when the rendered effect is in place, the question remains: Do I believe my eyes? Is *Species 8472* standing there looking at that guy?

Whether the subject is an alien or a spaceship, visual effects should always add to the story without distracting the viewer. Beyond being believable, we always strive to put some emotion into the shot... to add some life. Ultimately, the real challenge in all of the visual effects we do for *Star Trek: Voyager* is to take the viewers where they have never gone before.



Deep Space Nine: "Sacrifice of Allardice"

John Allardice

(Foundation Imaging: Visual Effects Supervisor)

This was, undeniably, an interesting first foray into the world of **Star Trek** for me. I'd been at *Foundation* just over a week when the script for *Sacrifice of Angels* landed on my desk. Just a cursory glance over it revealed this episode to be, not to put too fine a point on it... one huge kick — ass battle sequence from end to end.

As far as the **Trek** universe is concerned, this was without a doubt the largest, most complex space battle they had ever envisaged, with upwards of 4000 ships involved.

Fully half of *Starfleet's* capacity, a full *Klingon* armada, and a combined *Cardassian/Dominion* invasion force would be involved in approximately thirty shots, centering on the *Defiant's* attempt to break through the invading fleet and get back to the *Dominion* occupied *Deep Space Nine*.

With a project of this scope, coupled with the fact that a fair proportion of *Foundation* was, at that time, heavily involved with the huge **Voyager** two-parter *Year of Hell*, *Panamount* made the decision to split the FX for 'Sacrifice' between *Foundation Imaging* and *Digital Muse*.

For the initial modeling, we would handle all of the *Dominion/Cardassian* fleet, whilst *Muse* were charged with building the *Starfleet* ships. Then, when it came to the actual animation, *Muse* took the first half of the show (again, mainly the *Starfleet* oriented stuff, and the initial skirmishes in the battle) and we would handle the *Defiant's* charge into battle, accompanied by the arrival of the *Klingons* (the 'cavalry'), and the later appearance of the *Dominion* fleet in the **DS9** wormhole.

At the first VFX meeting on this show, it became pretty apparent that this was gonna be a major departure from previous **Trek** action stuff. Ex-supervisor David Stipes and VFX producer Dan Curry both had a very specific idea of the feel that they wanted for the battle, in fact the first words out of Dan's mouth were, "we want to break the glass tabletop on this one."

The "glass tabletop", is a phrase used to describe the way that ships generally move in the **Trek** universe,

most action on **Voyager** and **DS9** is played out on a 2d plane (like a naval battle).

On this occasion, however, both David and Dan had a different influence in mind, the "Battle of Britain", with the larger ships taking the place of the old bombers, and the smaller, more maneuverable ones, echoing *Spitfires* and *ME-109s*.

With this in mind, the first thing we had to do was plan the layout of both fleets; how many fighters would flank a warship? What squadron formations would they use? Who would be sent in first?

This process was made slightly more difficult by the fact that there were two separate FX companies involved, each deciding the variables for their own fleet.

So, for the first time ever on **Trek**, the 'animatics' (rough pre-visualizations of the FX shots, completed with low-rez models) were bouncing back and forth between us and *Muse*, and on some occasions, even before they went to David or Dan!

Once we'd worked out the basic layouts of the two fleets, we then proceeded into the more detailed choreography of how the individual shots could be accomplished: much more of a challenge now that we were free to move in all 3 dimensions.

With the huge difference in size between the larger and smaller ships, it was quite easy to run into scaling problems, from a framing standpoint. If we framed for the larger ships, the major portions of the battle would be effectively reduced to the appearance of a bunch of angry fireflies buzzing round a brick. So, the decision was made to frame most of our shots more from the viewpoint of a fighter-sized ship. This increased the detail needed for the models of the larger ships, as we would spend a fair amount of screen time skimming over the surface of the cruisers or warships, following the *Defiant* on her roller coaster run through the blockade.

For the next three weeks *Foundation* looked more like a model shop than a CG house, the large-scale miniatures of the *Cardassian* and *Dominion* ships were littering the desks of our 4



Halfway through the 'roller coaster shot', as one of the flanking *Birds of Prey* gets some serious remodeling. Below: The *Defiant* escaping as the *Jem'Hadar* battleship has a 'bad superstructure day'.

main modelers on the show: Brandon McDougal taking the *Cardassian Galor-Class Cruiser*, Trevor Peirce on the *Klingon Vorcha*, Dave West on the *Cardassian 'Silverfish'*, Mike Stetson on the *Jem'Hadar Warship* and 'Bug' fighter... and finally, on drums...

The shots themselves were primarily animated by myself and Mojo, with Trevor, Mike and Dave doing R&D on duplicating the weapons fire from the various ships (This is normally done in the *Harry* bay by the VFX supervisors themselves, but due to the rather kinetic nature and timing of the shots, this would have been an absolute nightmare).

Mojo took three shots, a continuous sequence involving the arrival of the *Klingon* 'cavalry', the highlight of which is a shot of the *Klingon* fleet coming out of the sun to descend on the unsuspecting *Dominion* hordes (which even Mojo himself admits was inspired by the classic shot of the *Falcon* appearing at the end of the *Death Star* assault in **Star Wars**). I took the majority of the shots involving the *Defiant's* flight through the fleet, including what was eventually referred to as the 'roller coaster shot'. This was essentially a reverse angle on the *Defiant*, flanked by three *Klingon Birds of Prey*, the camera following them in a single, continuous 10 second

shot, as they cut a swathe, all guns blazing, through the *Dominion* lines. Apart from the complexity of the foreground action, this was one of the few shots that was wide enough for us to show the scale of the entire battle. That single shot contained over 2500 ships, and probably about every pyro element that we have...

The shot directly following that one was one of those lucky times when an idea pops up at an FX meeting and someone says "mmm. Yeah, OK. That's cool... go for it!" We cut from the previous shot to a front angle on the *Defiant*, cruising thirty feet above the wing of the mile-long *Jem'Hadar* battleship, as the entire thing goes up in a wave of explosions, the leading edge of the blast always just behind the *Defiant*. The *Defiant*, of course, escapes unscathed, as the *Jem'Hadar* ship tears itself to pieces in the background.

All in all, we had a good number of 'money shots' in this episode. It does remain as one of the most energetic episodes of **DS9**, FX wise, and it's a testament to our modelers, that in this episode of **DS9** (normally a fairly CG shy show) there was not one single shot — apart from the standard establishers — accomplished with motion control.



Building and Refitting Starships

Rob Bonchune

(Foundation Imaging: Visual Effects Animator)

Although my main duty at *Foundation* is scene animation for *Voyager*, I do enjoy building CG models. I've always been a big spaceship/vehicle fan and luckily there's enough building to be done for *Voyager* that I get to exercise this desire. My first opportunity for this was the *Nebula* class starship. You remember, the one that rescued the *Enterprise* crew at the end of *Generations*! The ship was needed for the episode *Message in a Bottle*, in which it is shown chasing (and then being destroyed by) the *Prometheus*. I had a grand time building it. Being a big practical model fan/builder, I got to have as reference, sitting at the front of my desk, the actual filming miniature! It was a good 4 feet across. In the effort to be expedient, I did "kitbash" existing parts from the CG *Enterprise D*, but it still needed completely new parts and major changes to existing maps to match the miniature. It might not have been on screen long, but I built and detailed it so it could be used again and again.

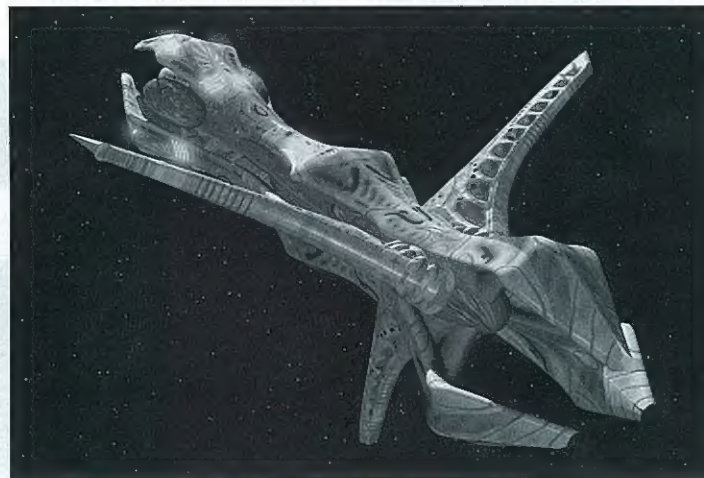
Another ship that I worked on was the *Voyager* herself. The CG model of the *Voyager* as *Foundation* received it was beautiful. This was thanks to the talented CG model builders at *Ambalin Imaging* (now *Digital Muse*). They did a fantastic job. As the shows progressed, the need to get closer and closer to the ship meant that we were going to have to add more detail to the *Voyager*. This would help it hold up to closer scrutiny by the camera. One of the things I noticed was that under certain lighting conditions the ship had a slight reddish brown hue. I went in and had a look at the maps. They were a basic neutral gray with a slight tint towards red. Now, on TV, the ship looks neutral grey, but the practical miniature is actually Duck Egg Blue. We decided to change the maps to reflect this in an effort to match the practical more closely at close range. Another thing I noticed was that, when seen close, the deflector dish's light on the practical miniature faded out towards the edges. I mapped the dish to reflect this look. At this point, I just kept going. I re-mapped the bussards and the warp nacelles' warp glow area.

Now, I was certainly not the only one to notice and add changes. Our lead animator for *Voyager*, Mojo, noticed that the windows were just not holding up at close range. They were just an even luminescent white. This matched the miniature, but they were never getting this close to the miniature! He decided to add different still images from the actual set into the windows. It looked great and gave the ship a good sense of scale. There were also a lot of episode specific details added to the ship. Most of these were done for both parts of *Scorpion* and *Year of Hell*. These included close ups of different parts of the ship, like the cargo doors on the main hull (where *species 8472* was crawling) or different window sections (close up of bridge area for *Year of Hell* or *Tuvok's* quarters in *The Gift*). These were all beautifully executed by Koji Kuramura and Trevor Peirce. In this way, CG modeling is very similar to practical film modeling. You don't build the whole ship for close-ups, you build only the sections you need. For both mediums, you save time and money.

A future change that Mojo would like is to have actual footage of crew members walking the decks in the windows. At close range, this would look awesome!

All these present and future changes help keep the *Voyager* and other *Star Trek* ships as realistic and interesting as possible.

Species 8472 Ship, *Scorpion* Parts 1 and 2 (rear view).



Foundation Imaging, Dream Job for Spaceship Modelers

Brandon MacDougall

(Foundation Imaging: Visual Effects Animator)

My first five weeks at *Foundation Imaging* were some of the most challenging ever. *Foundation* was knee deep in two major episodes, for *Paramount Pictures*, *Sacrifice of Angels* for *DS9* and *Year of Hell Part II* for *Voyager*. My job: design and build two spacecraft for *Voyager's* *Year of Hell Part II* and build the *Cardassian Galor Cruiser* of *DS9* respectively, all on the computer.

The motion control model of the *Cardassian Galor Cruiser* was sent to *Foundation* from *Image G's* motion control department, shipping crate and all. With screw gun in hand to unpack the ship, it was time to get to work.

I set the motion control model of the *Cardassian Galor Cruiser* on my desktop and started to input measurements into our 3D software. First the hull of the spacecraft and then the primary disk and finally the outside panels or what my boss lovingly calls 'Nurnies'.

Next it was time to paint the 3D textures for the 3D model of the *Cardassian Galor Cruiser*. One of my fellow 3D modelers, Koji Kuramura, stopped by my office and pointed out that if I put the motion control model of the *Cardassian Galor Cruiser* on our flat bed scanner I could get a good color scan and panel detail.

One thing I have learned over the years working with concept designers like Syd Mead and Jim Martin, and now with Ron Thornton, Paul

Bryant and Rick Sternbach is to keep a very open mind!

The scanner approach worked very well for the base 3D texture and with a little painting in *Photoshop* I was finished. The overall response from *Paramount* and my co-workers was very uplifting. We can build 3D models that rival motion control models in quality and appearance for far less money.

My supervisor Mojo was next to inform me that we needed two original designs for the upcoming episode of *Voyager's* *Year of Hell Part II*. The specifications of the ships were: the *Nihydron* should look organic and the *Mawasi* should be more linear in shape. *Paramount* faxed us a picture of an old ship that had appeared somewhere in the *Trek* "timeline" as the direction for the *Mawasi*. The faxed picture looked a lot like an *X Wing Fighter*, but I would do my best to change the look.

Like any good animator I like to get into the mindset of the event, and the people that live on our new spacecraft. Likewise, if we have information and plates from *Paramount* of the people and costumes, I tend to use it. I have found that the colors of the costume work well for deciding the colors that I paint on the spaceship.

Paper in hand I made balloon drawings of the *Voyager* spaceships. Balloon drawings are called this due to the fact that they are loose and nondescript. This gives one the freedom to "flesh out" ideas fast.

One warning is not to show off your balloon drawings, as people will just not get it. When you see something you like in your balloon drawing add more detail or, better yet, move over to your favorite medium: clay, paint or kit bashing. In my case, I turn to my 3D modeling software on my PC.

Now I have the shape, colors and the thought process of the people that pilot the craft. It is time to build it on the computer! The images shown here are some of ships that I have built for *Paramount*.



Above: The *Defiant* being chased through the *Dominion Fleet* by several *Jem'Hadar* bugs.

Right: *Nebula Class Starship, Message in a Bottle*.

Below: This image demonstrates how the talented staff of *Foundation Imaging* puts it all together!



U.S.S. Prometheus 3D rendering from *Message in a Bottle*.

Left: *Species 8472 Ship, Scorpion Parts 1 and 2* (front view).

Below: Before and after... the *Hirogen Hunter* fights with a stuntman. The stuntman is subsequently replaced with *Species 8472*.



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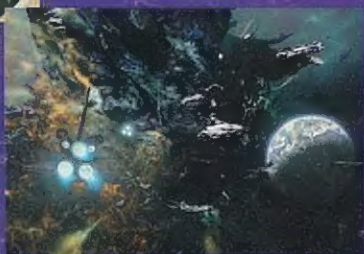
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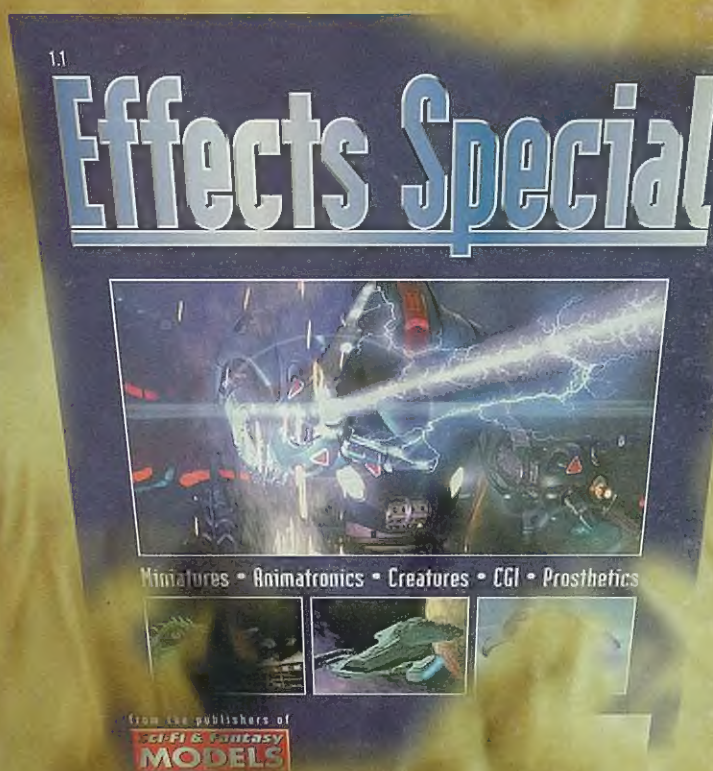
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